StarKist.

Oct 12, 2011

Mr. Alan Ota US EPA Region 9-OPINAP (E-4) WTR-2 75 Hawthorne Street San Francisco, CA 94105

Dr. Toafa Vaiaga'e, Director Office of the Governor, AS EPA EOB Utulei, American Samoa 96799

Gentlemen:

RE: OD 93-01 SECTION 6.2
Reports and Correspondence

Pursuant to the above referenced Ocean Dumping permit, the final quarterly report for OD 93-01 is enclosed.

Section 6.2.1 and Section 6.2.3

All reports and related correspondence required by General Condition 1.10, Special Conditions 3.2, 3.3, 4.3, 4.5, 4.7, 5.2, 5.3, 5.4, 6.1, and all other materials, including applications shall be submitted to (EPA Region IX) (American Samoa Environmental Protection Agency).

Data compiled are for the period of July 2011 to September 2011. Analytical performance concluded all parameters were met

Joe Carney.

Manager, Engeneering and Maintenance

cc: Brett Butler, SKS General Manager

Michael Wolfram, OPINAP Program Director

File

Data Form for 3-Month Report on Waste Stream Analyses for StarKist Samoa MPRSA 102 Permit #OD 93-01

Reporting Period: From July 2011

to

September 2011

StarKist Samoa - On Shore Storage Tank

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-day Biological Oxygen Demand (mg/L)	Oil & Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
8-Jul-11	68413	42214	52069	5887.0	685	5350	5600	7.12	1.03
OD 93-01 Permit Limits	95,760	77,170	105,900	52,110	3,080	13,370	7,640	6.2 to 7.3	0.93 to 1.05

StarKist Samoa - On Shore Storage Tank

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-day Biological Oxygen Demand (mg/L)	Oil & Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
11-Aug-11	68536	50835	46125.8	4432.5	470	5950	6050	6.89	1.01
OD 93-01 Permit Limits	95,760	77,170	105,900	52,110	3,080	13,370	7,640	6.2 to 7.3	0.93 to 1.05

StarKist Samoa - On Shore Storage Tank

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-day Biological Oxygen Demand (mg/L)	Oil & Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
2-Sep-11	70504	59178	55193.2	4850	670	4550	4800	6.92	1.01
OD 02 04 Di4					1				
OD 93-01 Permit Limits	95,760	77,170	105,900	52,110	3,080	13,370	7,640	6.2 to 7.3	0.93 to 1.05

Note: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

Monthly Volumes of StarKist Samoa Fish Processing Wastes Generated Per Day and Volumes of Fish Processing Wastes Disposed at the Ocean Site

Month: July 2011

	DAF Sludge	Cooker Water	Press Liquor	
	Generated	Generated	Generated	Total Generated
0D 93-01	(gallons/day)	(gallons/day)	(gallons/day)	(gallons/day)
Permit Limits	30,000	70,000	100,000	

Date	DAF Sludge Generated (gallons/day)	Cooker Juice Generated (gallons/day)	Press Liquor Generated (gallons/day)	Total Generated (gallons/day)	Volume Ocean Disposed (gallons/day)
1-Jul-11	7000	28000	35000	70000	
2-Jul-11	2250	9000	11250	22500	178000
3-Jul-11	1500	6000	7500	15000	
4-Jul-11	1000	4000	5000	10000	
5-Jul-11	5750	23000	28750	57500	
6-Jul-11	9625	38500	48125	96250	156250
7-Jul-11	7125	28500	35625	71250	
8-Jul-11	8250	33000	41250	82500	175000
9-Jul-11	750	3000	3750	7500	
10-Jul-11	500	2000	2500	5000	
11-Jul-11	3875	15500	19375	38750	
12-Jul-11	10500	42000	52500	105000	198750
13-Jul-11	6375	25500	31875	63750	
14-Jul-11	9500	38000	47500	95000	191250
15-Jul-11	8250	33000	41250	82500	
16-Jul-11	3500	14000	17500	35000	187000
17-Jul-11	2250	9000	11250	22500	
18-Jul-11	6125	24500	30625	61250	
19-Jul-11	9625	38500	48125	96250	167500
20-Jul-11	6875	27500	34375	68750	
21-Jul-11	10250	41000	51250	102500	191250
22-Jul-11	7375	29500	36875	73750	
23-Jul-11	750	3000	3750	7500	188750
24-Jul-11	1000	4000	5000	10000	
25-Jul-11	7125	28500	35625	71250	
26-Jul-11	10500	42000	52500	105000	150750
27-Jul-11	7375	29500	36875	73750	
28-Jul-11	9000	36000	45000	90000	191250
29-Jul-11	6375	25500	31875	63750	
30-Jul-11	2750	11000	13750	27500	181250
31-Jul-11	750	3000	3750	7500	
Monthly Totals	173875	695500	869375	1668750	2157000

NOTE: An asterisk (*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred.

The number of violations are shown in the Monthly Totals row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum Sulfate: 16975.9Pounds/Month Coagulant Polymer: 411.5 Pounds/Month

Monthly Volumes of StarKist Samoa Fish Processing Wastes Generated Per Day and Volumes of Fish Processing Wastes Disposed at the Ocean Site

Month : August 2011

0D 93-01	DAF Sludge Generated (gallons/day)	Cooker Water Generated (gallons/day)	Press Liquor Generated (gallons/day)	Total Generated (gallons/day)
Permit Limits	30,000	70,000	100,000	

Date	DAF Sludge Generated (gallons/day)	Cooker Juice Generated (gallons/day)	Press Liquor Generated (gallons/day)	Total Generated (gallons/day)	Volume Ocean Disposed (gallons/day)
1-Aug-11	1500	6000	7500	15000	
2-Aug-11	4500	18000	22500	45000	
3-Aug-11	9750	39000	48750	97500	153250
4-Aug-11	6625	26500	33125	66250	
5-Aug-11	3000	12000	15000	30000	176250
6-Aug-11	2500	10000	12500	25000	
7-Aug-11	250	1000	1250	2500	
8-Aug-11	1000	4000	5000	10000	
9-Aug-11	7625	30500	38125	76250	
10-Aug-11	8250	33000	41250	82500	186750
11-Aug-11	7125	28500	35625	71250	
12-Aug-11	7875	31500	39375	78750	184000
13-Aug-11	7750	31000	38750	77500	
14-Aug-11	250	1000	1250	2500	
15-Aug-11	4500	18000	22500	45000	
16-Aug-11	8250	33000	41250	82500	110500
17-Aug-11	8625	34500	43125	86250	
18-Aug-11	8875	35500	44375	88750	184500
19-Aug-11	8375	33500	41875	83750	
20-Aug-11	4400	17600	22000	44000	158250
21-Aug-11	750	3000	3750	7500	
22-Aug-11	500	2000	2500	5000	
23-Aug-11	6625	26500	33125	66250	
24-Aug-11	9500	38000	47500	95000	
25-Aug-11	5250	21000	26250	52500	160750
26-Aug-11	8250	33000	41250	82500	
27-Aug-11	1000	4000	5000	10000	
28-Aug-11	500	2000	2500	5000	
29-Aug-11	6875	27500	34375	68750	
30-Aug-11	10000	40000	50000	100000	168750
31-Aug-11	7750	31000	38750	77500	
Monthly Totals	168025	672100	840125	1665250	1483000

NOTE: An asterisk (*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred. The number of violations are shown in the Monthly Totals row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum Sulfate: 15958.3 Pounds/Month Coagulant Polymer: 375.7 Pounds/Month

Monthly Volumes of StarKist Samoa Fish Processing Wastes Generated Per Day and Volumes of Fish Processing Wastes Disposed at the Ocean Site

Month: Sep 2011

0D 93-01	DAF Sludge Generated (gallons/day)	Cooker Water Generated (gallons/day)	Press Liquor Generated (gallons/day)	Total Generated (gallons/day)
Permit Limits	30,000	70,000	100,000	

Date	DAF Sludge Generated (gallons/day)	Cooker Juice Generated (gallons/day)	Press Liquor Generated (gallons/day)	Total Generated (gallons/day)	Volume Ocean Disposed (gallons/day)
1-Sep-11	11000	44000	55000	110000	189500
2-Sep-11	9000	36000	45000	90000	
3-Sep-11	8250	33000	41250	82500	185000
4-Sep-11	7000	28000	35000	70000	
5-Sep-11	1500	6000	7500	15000	
6-Sep-11	750	3000	3750	7500	
7-Sep-11	1000	4000	5000	10000	122500
8-Sep-11	6625	26500	33125	66250	
9-Sep-11	8875	35500	44375	88750	191750
10-Sep-11	8375	33500	41875	83750	
11-Sep-11	10500	42000	52500	105000	181750
12-Sep-11	6625	26500	33125	66250	
13-Sep-11	2250	9000	11250	22500	137500
14-Sep-11	9375	37500	46875	93750	
15-Sep-11	8625	34500	43125	86250	175000
16-Sep-11	11750	47000	58750	117500	
17-Sep-11	7750	31000	38750	77500	155000
18-Sep-11	7250	29000	36250	72500	
19-Sep-11	1250	5000	6250	12500	
20-Sep-11	2250	9000	11250	22500	138750
21-Sep-11	6500	26000	32500	65000	
22-Sep-11	10125	40500	50625	101250	191250
23-Sep-11	5875	23500	29375	58750	
24-Sep-11	8750	35000	43750	87500	188000
25-Sep-11	4750	19000	23750	47500	
26-Sep-11	11125	44500	55625	111250	
27-Sep-11	2250	9000	11250	22500	193750
28-Sep-11	5125	20500	25625	51250	
29-Sep-11	9750	39000	48750	97500	200000
30-Sep-11	6250	25000	31250	62500	
Monthly Totals	200500	802000	1002500	2005000	2249750

NOTE: An asterisk (*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred. The number of violations are shown in the Monthly Totals row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum Sulfate: 19111.8 Pounds/ Month Coagulant Polymer: 458.3 Pounds/ Month

StarKist Samoa CO Ocean Dump Site Monitoring Reports

July 01, 2011		TSS	TVSS	TP	TN	O&G	Ammonia
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Depth (m)	SKS	SKS	SKS	SKS	SKS	SKS
Station 1	control-1	6.0	2.5	0.015	0.40	0.49	0.042
	control-3	5.0	3.0	0.015	0.25	0.59	0.037
	control-10	4.5	2.0	0.020	0.45	0.12	0.031
	1	4.5	3.0	0.005	0.25	0.38	0.043
	3	5.0	3.0	0.025	0.40	0.25	0.048
	10	5.5	3.5	0.025	0.10	0.34	0.032
Station 2	1	4.5	2.5	0.000	0.20	0.24	0.037
	3	6.0	3.0	0.015	0.20	0.12	0.041
	10	5.5	2.5	0.020	0.25	0.24	0.044
Station 3	1	4.5	2.5	0.015	0.15	0.23	0.043
	3	5.0	3.5	0.035	0.25	0.24	0.027
	10	5.0	2.5	0.025	0.45	0.25	0.041
Station 4	1	5.5	2.5	0.005	0.20	0.12	0.044
	3	5.0	2.5	0.015	0.55	0.27	0.051
	10	4.0	2.5	0.045	0.15	0.38	0.051
Station 5	1	4.5	2.5	0.025	0.40	0.35	0.036
	3	5.0	2.5	0.015	0.20	0.13	0.051
	10	6.5	2.5	0.040	0.10	0.47	0.047

Aug - 12- 2011		TSS	TVSS	TP	TN	O&G	Ammonia
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Depth (m)	SKS	SKS	SKS	SKS	SKS	SKS
Station 1	control-1	5.5	2.5	0.010	0.30	0.45	0.039
	control-3	4.5	3.0	0.000	0.45	0.58	0.042
	control-10	4.5	2.5	0.010	0.45	0.34	0.036
	1	6.0	3.5	0.000	0.50	0.50	0.044
	3	5.5	2.0	0.015	0.25	0.62	0.035
	10	4.0	1.5	0.015	0.65	0.63	0.040
Station 2	1	5.0	2.5	0.025	0.25	0.62	0.032
	3	4.5	3.0	0.025	0.25	0.59	0.039
	10	4.0	2.5	0.005	0.50	0.34	0.032
Station 3	1	5.0	2.5	0.010	0.25	0.38	0.023
	3	5.5	3.0.	0.020	0.55	0.25	0.043
	10	4.5	2.5	0.000	0.25	0.47	0.037
Station 4	1	6.0	2.5	0.025	0.25	0.35	0.037
	3	5.0	2.5	0.030	0.30	0.63	0.050
	10	4.5	3.0	0.010	0.45	0.38	0.026
Station 5	1	4.5	4.0	0.015	0.25	0.49	0.048
	3	5.5	3.5	0.025	0.10	0.26	0.049
	10	6.5	3.0	0.025	0.05	0.71	0.042

TSS is reported as non-filterable residue

TVSS is reported as volatile non-filterable residue

StarKist Samoa CO Ocean Dump Site Monitoring Reports

Sep - 02 - 2011		TSS	TVSS	TP	TN	O&G	Ammonia
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Depth (m)	SKS	SKS	SKS	SKS	SKS	SKS
Station 1	control-1	4.5	2.5	0.015	0.35	0.69	0.020
	control-3	5.0	3.0	0.015	0.15_	0.45	0.025
	control-10	4.5	2.0	0.015	0.25	0.62	0.038
	1	4.5	1.5	0.005	0.25	0.34	0.027
	3	5.0	2.5	0.020	0.05	0.35	0.018
	10	5.5	3.0	0.025	0.20	0.56	0.022
Station 2	1	5.5	2.0	0.020	0.00	0.58	0.041
	3	5.0	2.5	0.010	0.15	0.56	0.037
	10	5.0	2.5	0.000	0.20	0.36	0.023
Station 3	1	4.5	2.0	0.005	0.20	0.58	0.038
	3	5.5	1.5	0.010	0.05	0.34	0.039
	10	5.0	2.0	0.000	0.10	0.37	0.030
Station 4	1	4.5	3.0	0.005	0.15	0.47	0.043
	3	4.0	2.5	0.030	0.15	0.60	0.017
	10	5.5	2.5	0.010	0.10	0.49	0.028
Station 5	1	5.0	2.5	0.020	0.35	0.46	0.038
	3	5.5	1.5	0.015	0.25	0.50	0.050
	10	5.0	3.0	0.010	0.20	0.58	0.044

TSS is reported as non-filterable residue TVSS is reported as volatile non-filterable residue

Ocean Disposal Site Monitoring Report

(OD Permit 93-01 & 93-02)

09 July, 2011

Monitoring Vessel:

F/V Blue Moon

Discharge Vessel:

F/V Blue Moon

Chief Investigator:

Mike Crook

Starkist Samoa Liaison:

Joe Carney

STP/Tri Marine Liaison:

Craig Double

Determination of Sampling Positions:

All positions obtained by GPS

Satellite Navigation

Mike Crook P.O. Box 4933 Pago Pago, AS 96799 13 July, 2011

Introduction

On 09 July, 2011 the tank-ship *Blue Moon* departed Starkist Samoa dock bound for the designated ocean dump-site area approximately seven miles south of Pago Pago Harbor, American Samoa, on a routine wastewater disposal operation and for the purpose of monitoring this disposal of tuna cannery generated hi-strength liquid wastes into the waters of the Pacific Ocean. This monitoring and reporting were conducted in compliance with general permit conditions and Appendix A of Ocean Dumping Permits OD 93-01 & OD 93-02.

Chronology of Events

- <u>0520:</u> The *Blue Moon* departed Pago Pago Harbor bound for the dump-site location with Master/Principal Investigator, Chief and Mate on board.
- <u>0615:</u> The Blue Moon entered the dumpzone circle @ 14*22.6' S x 170*38.7' W.
- 0625: The Blue Moon arrived at the dump-zone center, where observed SE winds and slight south to southeasterly seas initially indicated disposal operations be conducted in the southeastern (SE) dump-zone quadrant.
- Ontrol Station Monitoring. The Blue Moon arrived 1.1 nautical miles (NM) up-current or southeast (SE) of the dump-zone center, where discrete seawater samples were taken from depths of 1, 3, and 10 meters. Water temperatures, color, pH and observed sea/sky conditions with stations' position were recorded (Table 1). Seas at this time were slight with SE swells to 1.5 meters and east winds at 12 knots (kts.) with the barometer reading 29.62. Current set and drift of the ship, by GPS, were to the northwest at 0.8 knots. No floating materials or sea life were observed here.
- The *Blue Moon* began disposal operations in the SE dump zone quadrant and continued discharging cargo (high strength waste water) with a northeast (NE) to southwest (SW) reciprocal, elongated elliptical pattern, approximately 2.25 miles long (see Plot 1) until 0925 hrs.
- Station One Monitoring (See Plot #1). Discrete water samples were drawn from depths of 1, 3, and 10 meters. Water temperatures, pH, stations' position and water color observations were all recorded in Table 1. The SE wind had increased to 15 kts. with mostly cloudy skies. The waste plume, visibly present here as a heavy surface sheen, also had a sparse presence of suspended material as described in Table 1. The current/wind drift of the ship was GPS determined to be northwesterly (NW) @ 1.0 knots. No sea-life was observed.

<u>O940:</u> Station Two Monitoring. Station two was sampled with the same procedures as station one with measurements and observations being recorded in Table 1. This position showed no visible sign of either the typical waste plume sheen or the suspended particulates noted at Station #1. The average drift rate of the ship with current and wind was GPS determined here to be northwesterly (NW) at a rate of 1.1 knots between Stations #2 & 3 (See Plot #1). No sea-life was noted at this position.

<u>Station Three Monitoring.</u> Seawater samples were collected and measurements taken as with Stations 1 & 2. This position, 0.25 NM down-current (NW) of Station #2, again showed no sign of the plume's characteristic surface sheen or additional floating / suspended particulate material. Sea & wind conditions remained the same as with the previous two sample stations and the drift rate of the ship between Stations #3 & 4 was 0.9 knots, again, to the northwest.

<u>O935:</u> Station Four monitoring. This area was the visible 'leading edge' of the waste plume and showed both the typical but heavy surface sheen and also had a sparse concentration of large (3-5 mm), light brown colored suspended particulate material. The northwesterly current/drift rate of the ship was again noted here to be at 1.1 knots. No sea-life was observed.

Station Five monitoring. Sampling for this final station was conducted 0.25 miles down-current or NW of Station #4 and was approximately 0.34 NM south of the zone center (See Plot #1). This location showed clear, natural appearing blue water as well as further down-current to the northwest. No additional suspended particulate material was visible. The final drift rate of the ship was noted to be to the NW at 1.2 knots. Other than a few random seabirds flying, no significant sea life was observed at this position or any of the previous stations. The final barometer reading was 29.65 when monitoring activities were concluded at 1020 hrs. The Blue Moon exited the disposal zone at 1030 hours and arrived back in Pago Pago Harbor to deliver the collected samples to the Starkist Samoa Company laboratory at 1120 hours.

Prepared by Mike Crook,

Principal Investigator

OCEAN DUMPING RESEARCH PERMIT: OD-93-01 & 02

Table 1

<u>Date:</u> 09 July,	Sea Conditions: Si	ight w/Southe	ast swells t	o 1.5 meter	rs. Wind: S	E @ 10 - 15 knots <u>Visibility:</u> Good, 6 - 10+ NM
2011	Barometer: 29.60	- 29.65	Curre	nt Set & D	west @ average 1.1 knots <u>Sky:</u> Partly Cloudy, 50 - 75%	
Time	Station	Depth (meters)	Temp.	рН	Odor	Color
0635	Control	1 3 10	26.7 26.7 26.7	8.2 8.2 8.2	None	Clear and natural deep pelagic blue w/ no floating or suspended materials.
0930	Station 1	1 3 10	26.7 26.7 26.7	8.2 8.2 8.2	Slightly Pungent	Broken patches of heavy surface sheen along with sparse, small, brown colored suspended particulates, not dense in concentration extending to the limit of visibility.
0940	Station 2	1 3 10	27.0 27.0 26.7	8.2 8.2 8.2	Slightly Pungent	In the center of the waste plume ellipse, no sheen or evidence of the discharge. Heavy surface sheen areas further down-current to the northwest. No particulates or floating scum.
0950	Station 3	1 3 10	27.2 27.2 27.2	8.2 8.2 8.2	None	Same as Station #2. Clear and natural deep pelagic blue w/ no floating or suspended materials. No sign of the wastewater plume at this position.
1000	Station 4	1 3 10	27.2 27.0 27.0	8.2 8.2 8.2	Slightly Pungent	Leading edge of the waste plume. Heavy glassy surface sheen w/ large brownish lumpy particulate material, suspended not floating and present down to the limit of visibility but not dense in concentration.
1010	Station 5	1 3 10	27.0 27.0 26.7	8.2 8.2 8.2	Pungent	Sampled 0.25 NM down-current (NW) of Station #4 and 0.34 NM south of the disposal zone center. Location showed deep, clear, natural appearing blue water. No more suspended or floating particulate material or sea life noted.

SAMPLE STATIONS POSITIONS

	LATIT	UDE	LONGITUDE					
Control - C	14° 24.63'	South	170° 37.39'	West				
Station 1	14° 24.83'	South	170° 37.18'	West				
Station 2	14° 24.72'	South	170° 37.43°	West				
Station 3	14° 24.61'	South	170° 37.69'	West				
Station 4	14° 24.50'	South	170° 37.94'	West				
Station 5	14° 24.25'	South	170° 38.33'	West				

NA	170 40,23 W		170 36.82 W	170 33.41 W
			PLOT #1 Obean Monitoring Sampling State Control (C) end Sampling State 89 July 2011 M. Crook, Investigator	ng Stations tions #1 - #5
14 22.73 \$		Disposal Zone Cente fal 24 0 S x 170 38	Current Set: Northwest	
1426.145				

Ocean Disposal Site Monitoring Report

(OD Permit 93-01 & 93-02)

12 August, 2011

Monitoring Vessel: F/V Blue Moon

Discharge Vessel: F/V Blue Moon

Chief Investigator: Mike Crook

Starkist Samoa Liaison: Joe Carney

STP/Tri Marine Liaison: Craig Double

Determination of Sampling Positions:

All positions obtained by GPS Satellite Navigation

Mike Crock P.O. Box 4933 Pago Pago, AS 96799 17 August, 2011

- <u>Station Two Monitoring.</u> Station two was sampled with the same procedures as station one with measurements and observations being recorded in Table 1. This position showed similar coloration qualities as those at Station #1, with the addition of a sparse concentration of fine, light brownish colored floating and suspended particulate materials. The average drift rate of the ship with current and wind was GPS determined here to be westerly (W) at a rate of 0.3 knots between stations 2 & 3 (See Plot #1). No sea-life or floating materials were noted at this position.
- <u>Station Three Monitoring.</u> Seawater samples were collected and measurements taken as with Stations 1 & 2. This position showed a broad area of broken streaks and patches of moderate surface sheen over clear sub-surface waters. Sea & wind conditions remained the same as with the previous two sample stations and the drift rate of the ship between Stations #3 & 4 was 0.3 knots, again, to the west.
- Station Four monitoring. This area showed more patches of moderate surface sheen very similar to Stations # 1 & 3. This position was at the forefront or leading edge of the wastewater plume as it drifted toward the west. The current/drift rate of the ship was again noted here to be at 0.3 knots. No sea-life was observed.
- Station Five monitoring. Sampling for this final station was conducted 0.25 NM down-current from Station #4 and just about at the disposal zone center (See Plot #1), with clear, natural appearing blue waters further down-current to the west. The final drift rate of the ship was noted to be 0.3 knots. Other than a few random seabirds flying by, no significant sea life was observed at this position or any of the previous stations. The final barometer reading was 29.63 when monitoring activities were concluded at 1030 hrs. The Blue Moon exited the disposal zone at 1038 hours and arrived back in Pago Pago Harbor to deliver the collected samples to the Starkist Samoa Co. laboratory at 1130 hours.

Prepared by M. Cwolf
Mike Crook, Principal Investigator

OCEAN DUMPING RESEARCH PERMIT: OD-93-01 & 02

Table 1

Date:	Sea Conditions: SI	ight w/ Easter	ly swells to	1.5 meters.	Wind:	East @ 7 - 15 knots	Visibility: Unlimited		
12 August, 2011	Barometer: 29.62	^ 29.65 ' 29.63	3	Curren	t Set & Drift Ra	te: West @ average 0. 33 knots	Sky: Partly cloudy, 30 - 35%		
Time	Station	Depth (meters)	Temp.	рН	Odor	C	olor		
0625	Control	3	26.1 26.1 26.1	8.2 8.2 8.2	None	Clear and natural deep pelagic blue w/ no floating or suspend materials. Patches of light to moderate surface sheen over deep, blue & c water. No floating or suspended materials			
0935	Station 1	1 3 10	26.7 26.7 26.7	8.2 8.2 8.2	None				
0945	Station 2	1 3 10	27.0 27.0 26.7	8.2 8.2 8.2	Slightly Pungent	brownish colored floating & susp	rface sheen along with fine & light ended particulates, not particularly ing down to the limit of visibility.		
0955	Station 3	1 3 10	27.0 27.0 26.7	8.2 8.2 8.2	Slightly Pungent	Same as Station #1.			
1005	Station 4	1 3 10	27.0 27.0 27.0	8.2 8.2 8.2	Slightly Pungent	This position was along the visua	Roating or suspended particulates. I, north to south extending, 'leading waste plume.		
1015	Station 5	1 3 10	27.0 27.0 27.0	8.2 8.2 8.2	None	natural appearing blue seawate	tewater plume w/ deep, clear and r. Sampled 0.25 NM down-current m Station #4.		

SAMPLE STATIONS POSITIONS

	LATIT	UDE	LONGITUDE					
Station 2 Station 3	14° 24.03'	South	170° 37.20'	West				
Station 1	14° 24.06'	South	170° 36.92'	West				
Station 2	14° 24.04'	South	170° 37.22'	West				
Station 3	14° 23.94°	South	170° 37.67'	West				
Station 4	14° 23.96'	South	170° 37.94'	West				
Station 5	14° 23.98'	South	170° 38.17'	West				

N \blacktriangle	170 39.90 W	170 37.00 W	170 3.4.10 W
4 21.30 \$		PLOT #1 Cosen Monitoring Sempling Station Control (C) and Sempling Station 12 August, 2011 M. Crook, Investigator	Stations ns #1 - #5
	Disposal Zona Center: 14*24.0' Six 17.0* 38.0	W W X C Current Set; West	
42420 S			

Ocean Disposal Site Monitoring Report

(OD Permit 93-01 & 93-02)

01 September, 2011

Monitoring Vessel: F/V Blue Moon

Discharge Vessel: F/V Blue Moon

Chief Investigator: Mike Crook

Starkist Samoa Liaison: Joe Carney

STP/Tri Marine Liaison: Craig Double

Determination of Sampling Positions:

All positions obtained by GPS
Satellite Navigation

Mike Crook P.O. Box 4933 Pago Pago, AS 96799 06 September, 2011

Introduction

On September 1, 2011 the tank-ship *Blue Moon* departed Starkist Samoa dock bound for the designated ocean dump-site area approximately seven miles south of Pago Pago Harbor, American Samoa, on a routine wastewater disposal operation and for the purpose of monitoring this disposal of tuna cannery generated hi-strength liquid wastes into the waters of the Pacific Ocean. This monitoring and reporting were conducted in compliance with general permit conditions and Appendix A of Ocean Dumping Permits OD 93-01 & OD 93-02.

Chronology of Events

- <u>0520:</u> The *Blue Moon* departed Pago Pago Harbor bound for the dump-site location with Master/Principal Investigator, Chief and Mate on board.
- <u>0612:</u> The *Blue Moon* entered the dumpzone circle @ 14*22.5' S / 170*38.6' W.
- <u>0622:</u> The *Blue Moon* arrived at the dump-zone center, where observed northeasterly winds and slight easterly seas initially indicated disposal operations be conducted in the northeastern dump-zone quadrant.
- Ontrol Station Monitoring. The Blue Moon arrived 1.1 nautical miles (NM) up-current or northeast (NE) of the dump-zone center, where discrete seawater samples were taken from depths of 1, 3, and 10 meters. Water temperatures, color, pH and observed sea/sky conditions with station's position were recorded (Table 1). Seas at this time were slight with easterly swells to 1.5 meters and a NE breeze of 10 knots with the barometer reading 29.66. Current set and drift, of the ship, were to the southwest at 1.3 knots.
- O645: The Blue Moon began disposal operations in the NE dump zone quadrant and continued discharging cargo (high-strength waste water) with a northwest to SE reciprocal, elongated elliptical pattern, approximately 2.25 miles long (see Plot 1) until 1000 hrs.
- Station One Monitoring. Discrete water samples were drawn from depths of 1, 3, and 10 meters. Water temperatures, pH, stations' position and water color observations were all recorded in Table 1. The NE winds had increased slightly to 15 knots with still, partly cloudy skies. The waste plume appeared here as an oblong area defined by glassy track lines of light to moderate surface sheen, extending in a northwest (NW) to SE direction and moving to the southwest (SW). The current/wind drift of the ship was now GPS determined to be westerly @ 1.0 knots. No sea life or floatable materials were observed.

Station Two Monitoring. Station two was sampled with the same procedures as station one with measurements and observations being recorded in Table 1. This position showed moderate glassy surface sheen but no floating or suspended particulate material. The average drift rate of the ship with current and wind was GPS determined to be southwesterly at 1.2 knots between stations 2 & 3 (See Plot #1). No sea-life was noted at this position.

1030: Station Three Monitoring. Seawater samples were collected and measurements taken as with Stations 1 & 2. This position showed only some fragmented streaks of light glassy surface sheen over clear blue water. The drift rate of the ship between Stations #3 & 4 was again 1.1 knots to the SW.

Station Four monitoring. Standard sampling procedures were again carried out as in previous stations. This position, 0.25 NM SW of Station #3, showed the typical heavy glassy surface sheen characteristic of the waste plume as well as many swaths or clumpings of floating, large, brownish particulate material. The same particulates were also suspended in the water column down to the limit of visibility. The SW current/drift rate of the ship was again noted here to be at 1.1 knots.

Station Five monitoring. Sampling for this final station was conducted at the visual leading edge of the waste plume and approximately 0.15 NM south of the zone center (See Plot #1). The leading edge of the waste plume was clearly visible at this location as a NW to SE extending old track line of heavy glassy surface sheen with clear, natural appearing blue waters further down-current to the southwest. Also present in and under this sheen, were more large, floating & suspended particulates as described at Station #4. The final drift rate of the ship was noted to be 1.2 knots again, to the SW. Other than a few random seabirds flying by, no notable sea life was observed at this position or any of the previous stations. The final barometer reading was 29.69 when monitoring activities were concluded at 1058 hrs. The Blue Moon exited the disposal zone at 1110 hours and arrived back in Pago Pago Harbor to deliver the collected samples to the Starkist Samoa Co. laboratory at 1200 hours.

Prepared by M. Chock Mike Crook, Principal Investigator

OCEAN DUMPING RESEARCH PERMIT: OD-93-01 & 02

Table 1

Date:	Sea Conditions: SI	ight w/ Easter	ly swells to	1.5 meters.	Wind:	East @ 10 - 15 knots <u>Visibility:</u> Unlimited
September 1, 2011	Barometer: 29.65	^ 29.69	Curr	ent Set & D	Prift Rate: South	vest @ average 1.2 knots <u>Sky:</u> Partly cloudy, 30 - 60%
Time	Station	Depth (meters)	Temp.	рН	Odor	Color
0635	Control	3	25.6 25.6 25.6	8.2 8.2 8.2	None	Clear and natural deep pelagic blue w/ no floating or suspended materials.
1010	Statiou 1	1 3 10	27.0 27.0 27.0	8.2 8.2 8.2	None	A few scattered patches of light surface sheen over deep, blue & clear water. No floating or suspended materials
102.0	Station 2	3	26.7 26.7 26.7	8.2 8.2 8.2	Slightly Pungent	Broken patches and streaks of moderate surface sheen over deep, clear blue water. No floating scum or other particulate type materials present.
1030	Station 3	1 3 10	27.0 27.0 26.7	8.2 8.2 8.2	Slightly Pungent	Same as Station #1.
1040	Station 4	1 3 10	26.7 26.4 26.4	8.2 8.2 8.2	Pungent	In a long northwest to southeast extending track line of heavy surface sheen with many floating swaths of large brown particulates that were also present suspended in the water column to limit of visibility.
1050	Station 5	3	26.7 26.7 26.7	8.2 8.2 8.2	Pungent	Leading Edge of the waste plume. Distinct boundary of heavy surface sheen along with the same floating and suspended particulates as described at Station #4 but not as dense. Clear & natural blue seas further down-current to the southwest

SAMPLE STATIONS POSITIONS

	LATIT	UDE	LONGITUDE					
Control - C	14° 23.43'	South	170° 37.40°	West				
Station 1	14° 23.22°	South	170° 37.13'	West				
Station 2	14° 23.41'	South	170° 37.34'	West				
Station 3	14° 23.62'	South	170° 37.54'	West				
Station 4	14° 23.87'	South	170° 37.81'	West				
Station 5	14° 24.13'	South	170° 38.19'	West				

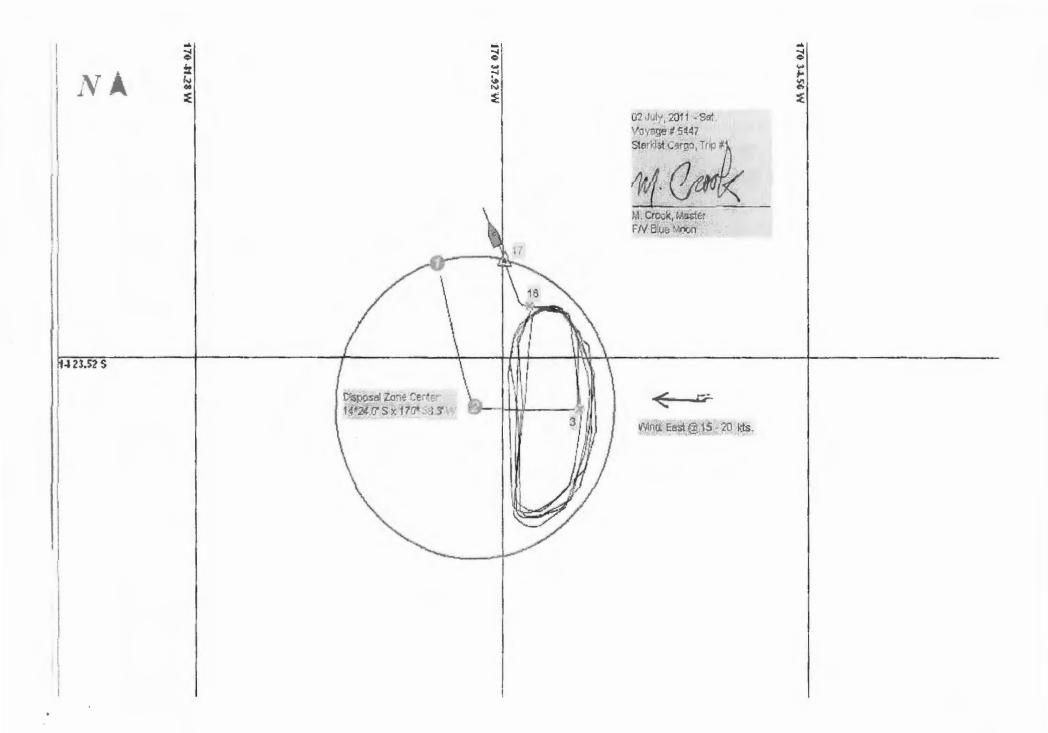
N	170 -41.98 W	170 38.55 W	170 35.12 W
14 20.93 \$		PLOT #: Ocean Monitoring Sampling Stations Control (C) and Sampling Stations #1 - #5 Ul September, 2011 M. Crook, Investigator Disposal Zone Center: 14/24.0' Six 170' 38.3' M	Current Set; Southwest
1424.365			

OCEAN DUMPING MONTHLY SUMMARY

F/V BLUE MOON		July, 2011							
NUMBER OF TRIPS:	Starkist	Other 0	Joint O	TOTAL:					
GALLONS-FOR THE MONTH:	Starkist 2,164,000	Other 0	Joint 0	TOTAL: 2,164,000					
GALLONS FOR SOLO TRIPS:	Starkist 2,164,000	Other 0	_						
RUNNING TIME ON TRIPS:	62.2 hrs.								
DISCHARGE TIME ON TRIPS:	34.03 hrs.								
AV. GPM DISCHARGE RATE:	121.7 gal/min/kt								
AV. TRIP TIME:	5.18 hrs.								
AV. PERCENTAGE OF VESSEL USED BY EACH CANNERY - BY GALLONAGE:									
Starkist Other 100.00% 0.00%									

MASTER:

)7/02/11 Sat.			FΛ						Log	Voya	age #:	5447	
7/1	Time 1545 2145 0(30	Begin 1 st Loading SK Finish 1 st Loading SK Begin 2 nd Loading SK				Permit # O	D 93	-01 & C)D 83-0	2 Volume Loa	ded: SK Other Total	0	8,000		Gallons Gallons Gallons
7/2	C 300	Finish 2 nd Loading SK	WP#	GPS	Posit	ion		Wind		% Clouds	Barometer	Swell		Speed	Course
	0530	Depart Starkist		14*16.50'	S	170* 41.2'	W	East	12	60	27.58		Metric	kts	True*
	0625	Arrive Edge of Zone	#1	14*22.	S	170*38.	W		- (5	.90	29.59	Fto	SE-2.7	8:4	166
		Arrive Zone Center	#2	14*24.0	S	170*38.3	W	e)	11	LI	ч	24	1,	8.2	165
	0645	Begin Discharge	#3	14-24.04		170+37,19	W	61	LI	(1	(~ '	\(\cdot\)	, X	8,2	165
	0700			14.23. 55		170*37-71		11	1,	- Br	27.60	.,	in .	8.4	178
	1 15	Remarks:	#5	14*24.59		170*36 98		East	-18	10	1	1	2	8-6	009
	" 30		#6	14*2 3.31	S	170*37:74	W	1	9	n ·		1		8.3	186
	" 45			14*25.091	S	170*37.60	W		7	1,			5	8.0	073
	0.860			14.23.51	S	170*36.79	W	5	4	80				8.5	338
	" 15					170*37.74			1)		1		8.6	179
	" 3°o_		# 10	14*2 7.35		170*37.07			1					3,8	0/6
	* 45					170*37.85					29.61			8.9	183
	0700			14*24 97		170*37.42		EOS!	-20	75	u		` 10	8.7	011
	11/15		# 13	14+23.21	S	170*3759		1	1	(-	15	1		8.7 8.8 7.0	187
	4 3e			14-24-76		170*37-78	W.	1	7	80	-1			7.0	176
	45			14*23.34		170*37.07	W	1		· ·	29.62			9.(321
				14*2	S	170*3	W		+						
				14*2	S	170*3	W	 				 	15		
				14*2	S	170*3	W					1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
			# 19	14*2	S	170*3	W								
			# 20	14*2	S	170*3	W					1			
				14*2	S	170*3	W					1			
			1	14*2	S	170*3	W					1	20		
				14*2	S	170*3	W								
	0950	Finish Discharge	#16	14.23.04	S	170*37.53	/ W	Ensi	5 20	80.20	29.62	Fto	SE-2.0	8.8	272
	0955	Exit Discharge Zone	#17	14*2 2 . 60	, s	170*3 7.82	W	11	77	1, 50	11	19 10	//	8.8	33/
	1050	Secure SK Dock	1	14*16.50'		170*41.2'		<u> </u>				 			231
		tion: At Center W	20			of Discharg		lest		Disch	narge Pattern_	Ellip	58		
		ge Time: <u>185</u> m							6	kts. Total Ti	me Run_5.	33'	hr.		
	Navigational	Plot made: V 24	Pres	ence of Plui	me?	10				£ } ~~~					
	Time and pos	Plot made: V A	nateria	al: Nona				Disc	charge	Rate: // /	Gallons/m	in/kt.		Λ	
	Unusual Occ	urrences? Alana				,						nni	0	//	
	Notifications	urrences? <u>Norv</u> made: A.S.P.A. <u>i/</u>	/	U.S.C.G.	M.S.	D. V				Master: F/V	Blue Moon	M.	R	voll.	



	Date:	07/06/11 Weds.			F	/V Blue	Мо	on Ocea	an l	Dumpin	ng Log	Vo	yage		
	Time					Permit # 0	D 93	-01 & OD 93-	-02						_
	1800	Begin 1" Loading SK								Volume Load	ded: SK	156	,250		Gailons
5	2130	Finish 1 Loading SK				Trip#1-X					Other	0			Gallons
	0200	Begin 2" Loading SK				Trip#2		A.			Tota!	150	250		Gallons
16	0530	Finish 2 nd Loading SK				All and the second seco	4	-							•
t.			WP#	GPS	Posi	tion		Wind	%	Clouds	Barometer	Swell		Speed	Course
	0545	Depart Starkist		14*16.50'		170* 41.2'	W	SE-12-		80	29.60		Metric	kts	True*
	0635	Arrive Edge of Zone	# 1	14*22.57		170*38.68	W	h d		100	C	SE-	2.0	8-4	162 160 135
	0645	Arrive Zone Center		14*24.0		170*38.3	W	67 15)	14	βl	it	80	160
	0653	Begin Discharge	#3	14*24.54	S	170 37.39	W	L4 gh			41	Li	ч Х	8.2	135
	0708		#4	14-24-00	S	170*37,44	W			(27.61	**	- (8.6	224
	" 23	Remarks:	#5	14*2 4.76	S	170*37.36	'W	C)))		j	71	13	H	8,5	018
	1 38		#6	14*24.03	S	170*3 7.38	" W	~ G		90	e.[11	L'	8.7	222
	" 53		#7	1424 58	'S	170*36.99	· W	SE-15		0	Le .		1 5		021
	0808		#8	14-2-1.12	"S	170*37.50	W	1) 11	7	80	27.62			8.8	209
	7 33 7 38 7 53 0 908		#9	14*25,26	'S	170*37.68	W	SE-20		()	M			8.5	206
	" 38		# 10	14*24.05	'S	170*37.43	/W	11	1	h	u	1	1	8.7	206
	53		# 11	14.24.83	'S	170*37.35	W.	u		И	70	17		8.7	05/
	0908		# 12	14123,97	'S	170*37.43	W	10 11		14	29.63		/ 10	9./	2/4
	^ a3			14*2	S	170*3	W								
	., 38		# 14	14*2	S	170*3	W								
	11 53		# 15	14*2	S	170°3	W		1						
				14*2	S	170*3	W								
			# 17	14*2	S	170*3	W		_				15		
				14*2	S	170*3	W								
			# 19	14*2	S	170*3	W								
			# 20	14*2	S	170*3	W								
				14*2	S	170*3	W					T	1		
				14*2	S	170*3	W						20		
				14*2	S	170*3	W	T	\top	_		1			
	0920	Finish Discharge	#13	14.23.87		170*37.5	r w	SE-20		508	27,64	517	20	9.6	937
	0928	Exit Discharge Zone		14.22.5		170*3 7. 7.			_	Ir .	10/	1,	14	9.4	330
	1030	Secure SK Dock	7.5	14*16.50			W		-			 			1000
	Current Dir	ection: At Center N	W		End	of Dischar		W		Disch	arge Pattern	Elli	ose		
	Total Disch	ection: At Center Narge Time: 147 m	ins.	Average Sp	eed	During Disc	harge	8.65	kts	s. Total Ti	me Run 4.7	5	hr.		
	Navigation	al Plot made: You	Pres	sence of Plu	me?	No	- 3				-				
	Time and r	osition of any floating r	nateri:	al Non	2	***************************************		Discharge	e Ra	ite: 123	Gallons/m	in/kt		Λ	
	Unusual O	ccurrences?	U_			,							1	//	
		s made: A S P A	7	USCG	MS	ID V	- , · , - <u>, </u>		M:	aster: F/V	Blue Moon	MI	1//20	4	

NA	170 36.82 W	170 33.41 W
1	05 July, 2011 - Weds	
1	OS July, 2011 - Weds. Voyage # 5448 Starkist Cargo, Trip #1 M. Crook, Master	
14 22.73 \$	FM Blue Moon	
Į.		
į	Disposal Zone Center: 14*24.0'S x 170*39.3'W	
:		
	Wind Southeast @ 12 - 20 kts.	
1		
1426,148		

		07/09/11 SAT		F	/ V	Blue Moo			Log \	√oyage	#:	5449	
ſ	Time					Permit # OD 93	3-01 & OD 93-0			177-			7
717	1230	Begin 1* Loading SK						Volume Loa		175,0	96		Gallons
, ,	2135	Finish 1" Loading SK				Trip#1-X			Other	0			Gallons
-71 D	0930	Begin 2 rd Loading SK				Trip#2	on.		Total	175,00	0		Gallons
7[8	115	Finish 2 rd Loading SK	LAZDAK	0000	143		3.847 - 1	0/ 011	D	0 0		21	0
[0520	Depart Starkist	WP#	GPS P		on 170* 41.2' W	Wind 5E-10	% Clouds	Barometer 29,60	Swell Met		Speed kts	Course True*
	0615		# 1			170*38. 69 W	SE-12-	1 30	29.61	SE-1.5		8.2	161
	0625		#2	14*24.0		170°38.3 W	3 11	60	25.62	1	' 	8.0	13
i	0625	Begin Discharge		1424.54		170*37.52°W	1 17	60	y	1	X		045
	0760			14-2 4-40		170*37.83°W	12 11	ц	29.63	1		3:8	223
	· 15	Remarks;		14*2 4, 39		170 36.97 W	11 11	70	u			82	022
	S	Mondocency	#6	14-24.65	S	170*37,98 W	19 17	75	2264			8.8	218
	45	CANTON DAMPLE	#7	14.24.6(S	170*3 7.04 W	#- h	1	*4		5	8.7	318
	08-35	dRGW7 et 0635	#8	14-24.76	S	170*38,05W	SE'15		L1			7.0	220
	15	at Position:	#9	14.24.57	S	170*36 A7 W	4 1		e 51			8.8	013
	30	14-24,635 X	# 10	1424.931	S	170*38.17' W	il .		29.65			9.1	217
	45	170° 37.391 W	# 11	14-24, 191	S	170*36 98' W	14 00		C)			7.0	013
	0-900		# 12	14.24.981	S	170*38,27 W	11 /1		ч		10	9.2	209
	7.5 30			1424.36		170*36,95'W	it e					3.1	000
	30					170*3 W		`					
	45		# 15			170*3 W							
i	1000					170*3 W							
			# 17			170*3 W					15		
			# 18			170*3 W		<u> </u>					
						170*3 W							
			# 20			170*3 W							
						170*3 W			ļ				
			-			170*3 W				ļ	20		
	000		11 111			170*3 W	0= 1=		00 (5	Cm. 1 =		F2 (7)	1 0
	0925			14*24,66		170°37.(2' W		75 %	27,65	SE-1.5)	8.8	179
	1030	Exit Discharge Zone Secure SK Dock				170*3 8 76' W	s) V	i,	ų	4 4		9.4	338
Ì	1/20			14*16,50'		170*41.2' W	1//						<u></u>
		ection: At Center <u>N</u> U				of Discharge_/		Disch	arge Pattern <u>f</u>	111pse			
	Total Discharge Time: 160 mins. Average Speed Duning Discharge: 8.7 kts. Total Time Run 6.0 hr.												
	Navigational Plot made: ソマン Presence of Plume? 人 o												
	Time and p	osition of any floating m	nateria	1: None			Discharge	Rate: 125.	Gallons/m	in/kt.		/)	
	Unusual Od	courrences? NON							_i — =	MAC	In	21/	
		s made: A.S.P.A/		U.S.C.G.M	1.8.1	0.1	**************************************	Master: F/V	Blue Moon	111.	14	106	
										. 1 .		•	

$N \blacktriangle$	170 36.82 W
1	OB July, 2011 - Set Yoyage # 5449 Sterkist Gargo, Trip #1 *Ocean Monitoring Conducted M. Grook, Master FN Blue Moon
14 22.73 \$	
\$ 3 P	Disposal Zone Ceriter: 14*24.0' S x 170* 38.3' W
1	Wind Southeast @ 12-15 kts
1426.14\$	

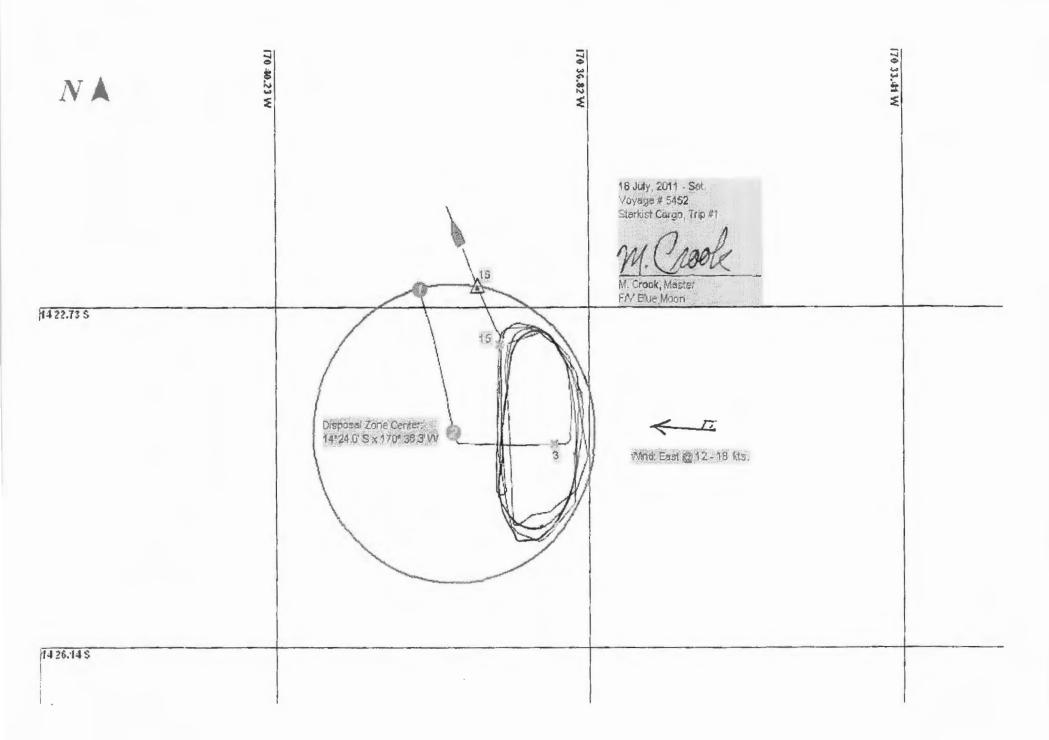
	Date:	07/12/11 Tues.			FN Blue N	100n Ocea	an Du mpin	g Log	Voyage	#: 5450	
	Time				Permit # OD	93-01 & OD 93	3-02	•			
7/11	1630	Begin 1st Loading SK					Volume Loa	ded: SK	198,7-	50	Gallons
"	2145	Finish 1 st Loading SK			Trip #1 - X			Other	0		Gallons
1/12	0130	Begin 2 nd Loading SK			Trip#2	-		Total	198,750)	Gallons
1110	0400	Finish 2 nd Loading SK			a. and more an average control of the second	-					_
·			WP#		Position	Wind	% Clouds	Barometer	Swell	Speed	Course
	1250	Depart Starkist		14*16.50'	S 170* 41.2'	W EJE-12	60	27.69	Metric		
	1250	Arrive Edge of Zone	#1			M EZE-13	40	67	SE-1.5	8.0	161
n n	1320	Arrive Zone Center	#2	14*24.0		M n u	h)	i,	1-1-1	8.0	164
	1310	Begin Discharge	#3	14.24,54			L ł	27.68		x 8.3	219
	11 25		#4	1424.47			50			8.1	219
	" 10	Remarks:	#5	14*2 1.72	'S 170*37.60' \	N	Ч	29-66		8:5	014
	کۍ ۳			14*2 4.45	'S 170*37.8/'\		60	27.65		8.6	208
	1410		#7	14.2 2.08	S 170*37,40 \		iī	11	1-/	5 8,3	050
	30		#8	1423,75	S 170*37.501		Light Rain	29 63	1-1	8.7	2/6 053
	" 40		#9	14*24.93	S 170*37. 24'	N n n	60	11	1	8.2	053
	" <u>5</u> 5			14*24.04			/1	27.62		8.9	2.20
	1510			14-25.17			U	1,		7.0	862
	25		# 12	14*23,85	'S 170*36.75'\		50	I(1/-	101 🤊 🔿	294
	40		# 13	14*25.29	S 170+38,12' 1	N II II	E\	29.61	14/	18.5	675
	55			14.24.68		W 11 14	40	ч		8.5	354
				14*2		N					
			# 16	14*2	- 1	N					
			# 17			N				15	
			# 18			W					
			# 19			N					
			# 20			N					
				14*2		N					
				14*2		W				20	
				14*2		N					
	1600	Finish Discharge	#15	1423.87	' \$ 170°37.35'	W SE-15	40 %	29.61	SE-1.5	- 9.4	24/
	1613	Exit Discharge Zone	#16	14-22.59	S 170°37, 36'	W	11	4	e3 e4	9.5	1336
	1705	Secure SK Dock		14*16.50'	S 170*41.2' W						
	Current Di	rection: At Center NU	N N		End of Discharge	NW	Disch	narge Pattern	Ellipse		
		narge Time: 170 m									
					t -	rge: <u>6(1)</u>	KIS. LOTAL L	me Kun_3,	10 nr.		
	Navigation	al Plot made: Y 24	Pres	ence of Plur	me? <u>No</u>						
		position of any floating r				Dischar	ge Rate: <u>134</u>	Gallons/m	nin/kt.	$\sim \Lambda$	
	Unusual O	ccurrences? Nov	19		/		· · · · · · · · · · · · · · · · · · ·		01/	124/1	
		ns made: A.S.P.A.	/	U.S.C.G.	Men		Master: F/V	Pluo Moon	10.	1109	
	MORRIGATION	is made. A.S.P.A		U.S.U.G.	MI.S.U/	_	iyiaster: r/V	DING MOOU		10000	

<i>N</i> ▲	170 33.41 W 12 July, 2011 - Tues Vayage # 5450 Starkist Cargo, Trip #1
!	Starkist Cargo, Trip #1 W. Crook, Master FN Blue Moorr
14 22.73 \$	
!	Disposal Zone Center: 14*24.0' S x 170* 38.3' W
İ	Wind: Southeast @ 12 - 18 kts.
1426,145	

Time Permit # OD 93-01 & OD 93-02 7/13 15 % Begin 1st Loading SK Volume Loaded: SK 171,250 Gallons 3/3e Finish 1st Loading SK Trip # 1 - X Other Other <th></th> <th>Date:</th> <th>07/14/11 Thurs.</th> <th></th> <th>F</th> <th>N Blue</th> <th>Мо</th> <th>on Ocea</th> <th>ın Dumpir</th> <th>ng Log</th> <th>Voyage</th> <th>#: 5451</th> <th></th>		Date:	07/14/11 Thurs.		F	N Blue	Мо	on Ocea	ın Dumpir	ng Log	Voyage	#: 5451	
1/3									•	0			
1/3	71.0	1540	Begin 1 st Loading SK						Volume Loa	ded: SK	191,25	S	Gallons
	413					Trip # 1 - X				Other	0		Gallons
	1	0200				Trip # 2	and the second			Total	191,250	2	Gallons
O S 4/ o Depart Starkist 14*16.50' S 170*41.2' W Fox 10 10 10 10 10 10 10 10 10 10 10 10 10	7/14	0300	Finish 2 rd Loading SK								, , , , , ,		
0 6 37 Arrive Edge of Zone # 1 4/22 5 8 / 5 170/38 20 W EQST - S 70 27.66 Sept. 25 8 20 69 0 0 0 0 0 0 0 0 0				WP#						Barometer			
0 € ₹ 7 Arrive Zone Center #2 14/24.0 S 170/38.3 W # " 50		0540								21.65		- l	True*
06 55 Begin Discharge #3 1472 4 (57 \$ 17037, 33 W 604 - 18 "		0637								27.66	cost-20		
## 142 142 1703 W W W W W W W W W									(00)		1 - 1 - 1	7.7	161
# 5 14*25.0 \$ 170*37.27 W			Begin Discharge			170*37, 23	/W		"		East-25X	7.7	090
# # # # # # # # # # # # # # # # # # #		0710			14,53,36,8	170*37.78	·W		60	- 11	1		184
# 7 14*24 3 2 5 170*37.66 W 50.47-25			Remarks:						-		1-1-	18:2	
O		" 40			14*23, 34' S	170 36 95	W		 	 	 - - - - - - - - - 	16.6	3/4
#9 14*2 3.04 \$ 170*37.60 W						170"3 7.66	W		 		+		
# 10 4*2 ½ 56		0810			14*2 4.6[S				__	 	1-1	8.6	1004
1											 - 		0/0/
14 14 14 14 14 15 17 18 17 18 17 18 17 18 18		40										18.8	
# 13 14*2*3. 93* \$ 170*3 6.87* W		55				170-3 7.16	VV	-		000	11 1 - 12	17.0	27/
# 14 14*2 9 170*3 W # 16 14*2 S 170*3 W # 18 14*2 S 170*3 W # 18 14*2 S 170*3 W # 19 14*2 S 170*3 W # 20 14*2		0910			14-29,65 \$	170-37.66	VV		40	07.67	1 11	18.7	180
# 15 14*2 S 170*3 W # 16 14*2 S 170*3 W # 17 14*2 S 170*3 W # 18 14*2 S 170*3 W # 19 14*2 S 170*3 W # 20 14*2		" 25								20 (0		18.0	
# 16 14*2 S 170*3 W 15 # 17 14*2 S 170*3 W 15 # 18 14*2 S 170*3 W 15 # 19 14*2 S 170*3 W 20 # 20 14*2 S 170*3 W 20 14*3 S 170*3 T 7.50 W 20 14*3 S 170*3 T 7.73 W 1 U 50 7. U 4 U 9.2 3366 1050 Secure SK Dock 14*16.50' S 170*41.2' W 20 Current Direction: At Center (1) 2 1		" 40				170-3 7-15		^ 4		21.68	 	7.0	177-
# 17 14*2 S 170*3 W		55			1						<u> </u>		
# 18 14*2 S 170*3 W # 19 14*2 S 170*3 W # 20 14*2 S 170*3 7.66' W East 22 67' S 170*3 7.73' W # 1 1 50.73 F 10 14*2 3.67' S 170*3 7.73' W # 1 1 50.73 F 10 14*2 3.67' S 170*41.2' W # 1 1 50.73 F 10 14*16.50' S 170*41.2' W # 1 1 50.73 F 10 14*16.50' S 170*41.2' W # 1 1 1 50.73 F 10 14*16.50' S 170*41.2' W # 1 1 1 50.73 F 10 14*16.50' S 170*41.2' W # 1 1 1 50.73 F 10 14*16.50' S 170*41.2' W # 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										-			
# 19 14*2 S 170*3 W #20 14*2 S 1											13	}	
# 20 14*2 S 170*3 W 14*2 S 170*3 W 14*2 S 170*3 W 14*2 S 170*3 W 09\$\$ Finish Discharge # 15 14*23,10′ S 170*3 7.66′ W East 22 46 2 2 20 14*2 S 170*3 W 09\$\$ Exit Discharge Zone # 16 14*2 2.69′ S 170*3 7.73′ W " " 50% " " " 9.2 336 1050 Secure SK Dock 14*16.50′ S 170*41.2′ W Current Direction: At Center West End of Discharge West Discharge Pattern Ellipse Total Discharge Time: 160 mins. Average Speed During Discharge: 8.63 kts. Total Time Run 5.2 hr. Navigational Plot made: 160 Presence of Plume? No											ļ		-
14*2													
14*2 S 170*3 W 20				# 20						-		+	
14*2 S 170*3 W									1		1 - 20		
09SS Finish Discharge #15 14*23,10′ \$ 170*3 7.66′ W East 22 46 % 2968 East 2.5 9.1 338 09S8 Exit Discharge Zone #16 14*22.69′ \$ 170*3 7.73′ W " " 50% " " 9.2 336 Current Direction: At Center West End of Discharge West Discharge Pattern Ellipse Total Discharge Time: 186 mins. Average Speed During Discharge: 8.63 kts. Total Time Run 5.2 hr. Navigational Plot made: V84. Presence of Plume? No				 								1	
O 958 Exit Discharge Zone # 16 14*2 2.69' S 170*3 7:73' W II II 507. II II 9.2 336 1050 Secure SK Dock 14*16.50' S 170*41.2' W Current Direction: At Center West End of Discharge Wood Discharge Pattern Ellipse Total Discharge Time: 186 mins. Average Speed During Discharge: 8.63 kts. Total Time Run 5.2 hr. Navigational Plot made: 186 Presence of Plume? No		8866		11.00				- 1 ~~	44 95	050	- 100	- 9 1	220
Current Direction: At Center Walt End of Discharge Wood Discharge Pattern Ellip Same Discharge Time: 186 mins. Average Speed During Discharge: 8.63 kts. Total Time Run 5.2 hr. Navigational Plot made: Value Presence of Plume? No		0933			14°23, 0 S	170*3 7.60	W_	East-22		2760	tost-d.		
Current Direction: At Center West End of Discharge Wood Discharge Pattern Ellipse Total Discharge Time: 186 mins. Average Speed During Discharge: 8.63 kts. Total Time Run 5.2 hr. Navigational Plot made: 188 Presence of Plume? No				#16				li ti	50%	1	4 (1	7.2	336
Total Discharge Time: 186 mins. Average Speed During Discharge: 18.63 kts. Total Time Run 5.2 hr. Navigational Plot made: 184 Presence of Plume? No								-A-					
Navigational Plot made: V&L Presence of Plume? No		Current Dire	ection: At Center 🔱	217	End	of Discharg	је <u> (</u>		Disch	narge Pattern	Ellipse		
Navigational Plot made: Yes Presence of Plume? No Discharge Rate: 23 Gallons/min/kt.							narge	. '8.63	_kts. Total T	ime Run 5.	2hr.		
Time and position of any floating material: New 3 Discharge Rate: 123 Gallons/min/kt.		Navigationa	al Plot made:1/21	Pres	ence of Plume?	No			1 45 -			^	
		Time and n	osition of any floating	materia	al: Nan a			Discharge	e Rate: [23	Gallons/n	nin/kt.	/}	
Unusual Occurrences? None,		Unusual Oc	currences? A	5		/					ANI (1//	
Notifications made: A.S.P.A. U.S.C.G.M.S.D. Master: FN Blue Moon			,		U.S.C.G.M.S.	D. /		-	Master: F/V	Blue Moon	11.	2001	

$N \blacktriangle$	170 40,23 W	170 36.82 W	170 33.41 W
		14 July, 2011 - Thurs, Voyege # 5451 Skarklet Cerge, Trip #1 M. Crook, Master FN Blue Moon	
.22.73 \$	Disposal Zone Center:	3 Wind: East @ 15 - 22 lits.	
26.14 S			

	Date:	07/16/11 sat.		1	FΛ	/ Blue Mo				ping L	og	Voya	age #	: 5452	
	0100	Begin 1" Loading SK				Permit # OD	33-0	1 & OD 93-0		ne Loaded:	SK	18	7,000		Gallons
7/15	0 200	Finish 1st Loading SK				Trip#1-X			VOIUI	ne Loadeu.	Other	10			Gallons
,		Begin 2 nd Loading SK				Trip#2					Total		000		Gallons ω
	2145	Finish 2 rd Loading SK				1110#2					10141		1000		Joanons
		Prinsit 2 Loading SK	WP#	GP\$1	osit	tion	W	/ind	% Cloud	s Bar	ometer	Swell		Speed	Course
	0530	Depart Starkist	T	14*16.50'				East-10	20		4.60		Metric	kts	
	0623	Arrive Edge of Zone	#1					ast-12	15		Eq.		7-1.8	8.2	160
	0633	Arrive Zone Center	#2	14*24.0				u u	11		^		1	7.9	162
	0640	Begin Discharge	#3	14-24 112		170-37-23 1	N	u 11	1/				JX	7,9	090
	0640		#4	14"23,51"	S		N	er et	1			1		8.4	1.78
	0710	Remarks:	#5	14.24.82		170-37.35	NE	ast-15	1		7	17	7	0,5	178
	425		#6	14*22 98	'S	170*37.331	N	u 11			1			8.8	286
	" 40 " 55		# 7	14*24, 24'	S	170*37.33'\	N	ic 11	1				5	8.6	180
	" 55		#8	14*23,691	S	170*36.951	N	1(×		\hat{a}	9,59			85	186
	0810		#9	14*23. 31	S	170-37-831	N	1	10		Li ,			8.7	186
	" 25			14*24.86	S	170'3'7.11'		17	1		L,			8.6	03/
	" 40		# 11	14*22.95	S	170*37.601		ast 18		2	9-60			8.7	264
	" 55			1424.81	S	170*37,64"	N	11 11	1				10	/1/	172
	0910		# 13	14*23,171	S	170*37.12" \		h n						9.0	183
	" 25		# 14	14.24,35	S	170*37.831		4 , .						7.2	183
	" 40		# 15	14*2			N								
				14*2			N								
			# 17				N						15		
				14*2			N					↓			
			# 19				N								
			# 20	14*2			N					-			
			-	14*2			N					-			
			-	14*2			N					 	20		
	- 00-		10.0	14*2			W		17-5	- h	6 / -	+	-	8 2	
	0935	Finish Discharge	#15	14-23-24	<u>'</u> S	170*3 7.77′	WI	cost-K	(0)	s a	7,60	Eas	<u> </u>	9.3	000
	0940	Exit Discharge Zone	#16		<u> </u>	170-38,67	W	A	"			1	31	9.5	338
	1035	Secure SK Dock	1-	14*16.50'		170°41.2' W						-111			
	Current Di	rection: At Center 🕡 🤉	M		End	of Discharge	Wes	<u> </u>		Discharg	e Pattern_	Ellip	50		
		harge Time: 175 m				. /	rge:_	8.74	_kts. To	otal Time	Run_5	1	hr.		
	Navigational Plot made: 122 Presence of Plume? No Time and position of any floating material: None Discharge Rate: 122.3 Gallons/min/kt.														
				al: None				Discharge	Rate:_\		Gallons/m		. 0	//	
		occurrences? <u>//ಚಾಗ್ರ</u> ns made: A.S.P.A/		110001		D 1/		_	Nfoote-	: F∕V Blue	Moon	M	(/ _{/1}	able	
	Nothication	is made: A.S.P.A.		0.5.0.6.	VI.O.	.U	-		iviaster	. F/V BIUE	NOON	/			



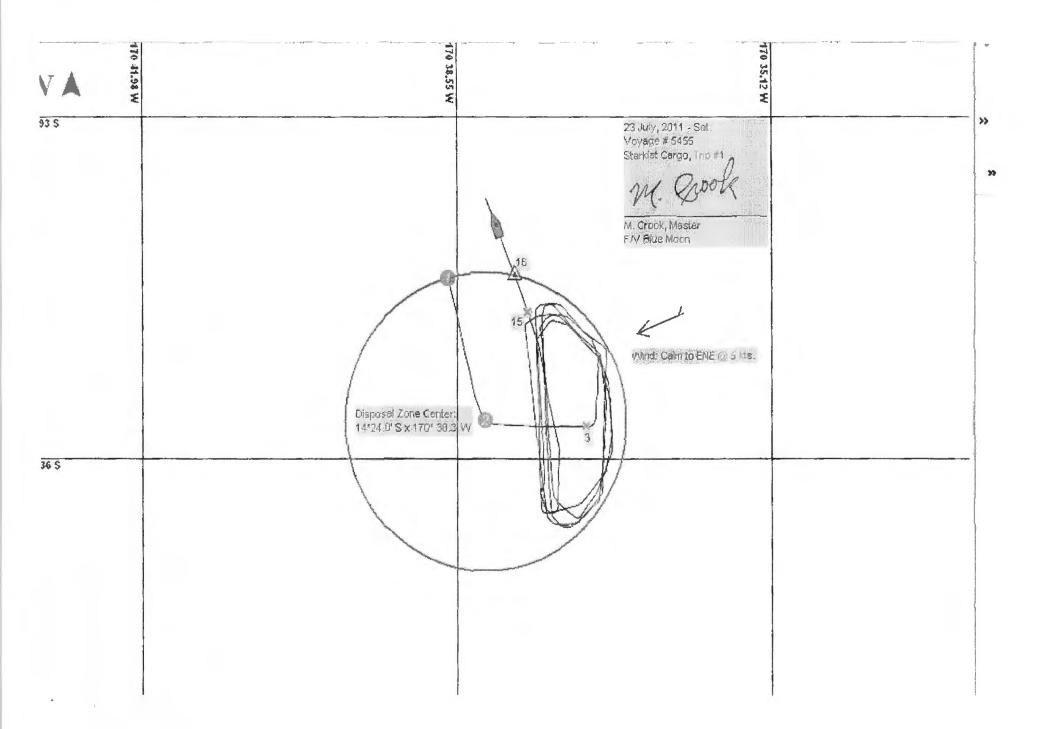
Date: 0//19/11 Tues.	F/V Blue M	loon Ocear	חוששש ו	Log	voyage	#: 5453	
Time	Permit # OD	93-01 & OD 93-0)2				_
Begin 1" Loading SK			Volume Loade	d: SK	167,50	0	Galions
2/95 Finish 1" Loading SK	Trip # 1 - X			Other	0		Gallons
D = 000 1 = 1/2 OIK	Trip # 2	HI deleter		Total	167,500		Gallons
y 6/10 Begin 2 rd Loading SK Finish 2 rd Loading SK					,		
	WP# GPS Position	Wind		arometer		Speed	Course
0520 Depart Starkist	14*16.50' S 170* 41.2' \	N EOOT - 5	25	37.58	Metric	kts	True*
	#1 14*22.56 S 170*38.63"	N East. 7	11	1/	East-1.0	8.5	164
		N 11 11	20	4		8. (162
	#3 14*24.08 S 170*37.23 V	V East-10		29.59	X	8.3	090
4 ৪১	#4 14.2 3.72'S 170.37.67'V	V 11 11	()			8.5	179
" 50 Remarks:	#5 14.24.24 S 170.36 97 V	v			ļ	8.5	008
0705	#6 14*23, 33'S 170*37.84'V	V 10 K	1.			8.6	183
1, 20	#7 14*24 75'S 170'3 7-10'V	/ : · ·	1,1		5		019
" 35	#8 14°23.13′ S 170°37.17′, V	V Fost				9.0	311
0808	#9 14*25.09'S 170*37.62 V	V ce t	15		-	8.7	151 348 183
0005	# 10 14*23.76' S 170*37.60' V					9.7	348
" 35 " 35	# 11 14*23, 81' S 170*37, 84' V	V	1,0		10	87	183
" 35	# 12 14*24.27' S 170*36.78'V	<u>v</u>			10	7.2	012
" 50	# 13 14*23.34'S 170*37.84'V	<u>v</u> / (10			21	339
0905	# 14 14*24.74 S 170*37.79 V				<u> </u>	8.6	337
" 50 0905 "20		V	1.		 		
"35		<u> </u>			15		
		V			10		
		V					
		V			<u> </u>		
		V					
		N			20		
		N			20		
0015			1000	19 05	15 4 10	9.4	227
0915 Finish Discharge	#15 14-23.26 \$ 170-37.75		50	27.75	E007-1.0	9,4	337 334
0 9 20 Exit Discharge Zone	#16 1422.61' \$ 170.37.95'				ļ	116	334
10 /S Secure SK Dock	14*16.50' S 170*41.2' W				-11.	L	
Current Direction: At Center Ws				rge Pattern_			
-	ins. Average Speed During Discha			e Run	hr.		
Naviantianal Distance VOA	. * /					^	
Navigational Plot made: y 24	Presence of Plume?_/\/0					/1	
Time and position of any floating of	Presence of Plume?	Discharge	Rate: //5	Gallons/m	nin/kt.		
Time and position of any floating in Unusual Occurrences?	material: ₩ ៚	Discharge	Rate: <u>//5</u>	_ Gallons/m	nin/kt.		

$N \blacktriangle$	170 36.82 W	170 33.41 W
	16	19 July, 2011 - Tues. Voyage # 5453 Sterkist Cargo, Trip #1 M. Crook, Master F/V Blue Moon
14 22.73 \$	Disposal Zone Certer. 14*24 0 S x 17/0* 38 3 W	Wind East @ 7 - 10 kis.
14 26.14 \$		

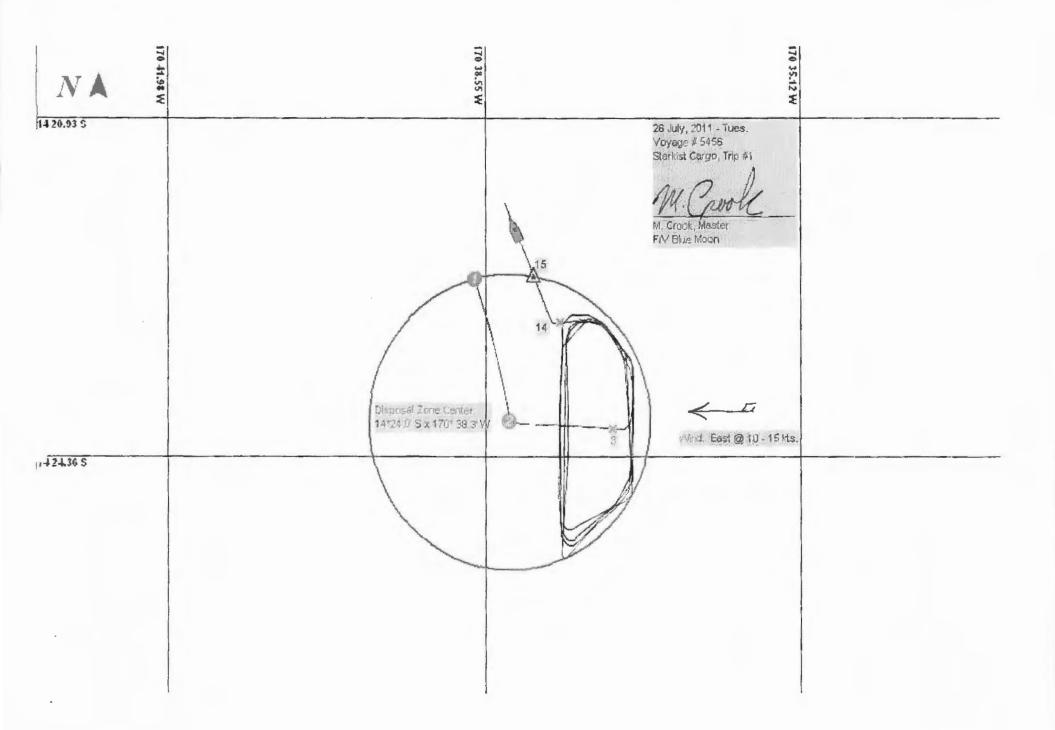
	Date:	07/21/11 Thurs.			F	N Blue	: Mc	on O	cea	n Dump	ing Log	Voyage	#: 5454	
	Time					Permit#					0 0	,		
120	1700	Begin 1" Loading SK								Volume Lo	aded: SK	171.25	0	Gallons
100	2145	Finish 1st Loading SK				Trip # 1 - X					Other			Gallons
1/21	0/00	Begin 2 rd Loading SK				Trip#2					Total	19425	ð	Gallons
1/21	0/00	Finish 2 rd Loading SK												
			WP#	GPS				Wind		% Clouds	Barometer	Swell	Speed	Course
	0640	Depart Starkist		14*16.50'		170" 41.2"	W	Enst-	5	35	29,51	Metric	kts	
	6735	Arrive Edge of Zone	#1	14*22.601	\$	170*38.	W		- (0	1	24,52	EJES- a. c	8.1	139
	0745	Arrive Zone Center	#2	14*24.0		170*38.3	W	l ₂	ü	M	41		8.0	164
	0750	Begin Discharge	#3	14-24.06	S	170-37-21	W	1-	*1	35	14	X		070
	0810		#4	14.23.62	(\$	170*3 7.7	3'W	t.		11		<u> </u>	85	178
	25	Remarks:	#5	14*24, 43	S	170 36 98	> W	11		11			185	189
	40 55		#6	14*23./8		170*377		Enst-		1.	1 / -			187
	55		#7	14-24,76	_S_	170*37./4	. W		١,	40			586	032
	0190		#8	14*23,25*	<u>S</u>	170*37.07	7/W	L	d	1			8-8	296 183
	25			14*24.65				East-	15				8.9	183
	40			14"2 3,90"		170*369		1	_				8.7	180
	SS			14*24.65					1_				9.1	180
	1010		# 12	14*24,39	S	170*36.98	5'W		\perp			1	0 7.0 8.8	007
	25		# 13	14*2 3. 6	S	170*37.73	, M						18.8	188
	40			14-25.04		170*37.3		1	<u>'</u>				18.6	0/1
	55		# 15		S	170*3	W							
			# 16			170*3	W							
			# 17			170*3	W					1	5	
			# 18			170*3	W							
			# 19			170*3	W							
			# 20			170*3	W							
				14*2		170*3	W							
				14*2	S	170*3	W					2	0	
				14*2		170*3	W							
	1055	Finish Discharge	#15	14-23.04	S	170-37-2	6' W	East-	15	307.	29,52	EJE 45-2.0	8.9	278
	10.59	Exit Discharge Zone	#16	14-22.70	' \$	170'3 7.65	s' W	4((1	35 %	"	es et	9,5	321
	1155	Secure SK Dock		14*16.50	S	170*41.2	W							
	Current Dir	ection: At Center 🗘 🤉	17		End	of Dischar	ne U	Jast		Disc	charge Pattern	Ellipse		
									-				Periodical Control of the Control of	
		arge Time: 180 m				. / -	charge	:0	`/_	_kts. lotal	I Ime Run 3.	hr.		
	Navigations	al Plot made: VD	Pres	ence of Plu	me?	No					•			
		osition of any floating r						Disch	arde	Rate: 122	?Gallons/r	nin/kt.		
		corrences? Nov						_ 3.001			_ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	_	1)	
		s made: A.S.P.A		11000	MS	n /		Parallel Parallel		Monton FA	/ Blue Moon	M. Case	40	
	NORBORNON	s made: A.S.P.A,	<u> </u>	_ 0.5.0.6.	IVI.S.	.U				master: F/	bine Moou	1.1. / P. V.		

$N \blacktriangle$	170 36.82 W	170 33,41 W
14 22.73 S	16	21 July, 2011 - Tours. Voyage # 5454 Starks: Cargo, Trip #1 M. Crook, Master FN Blue Moon
	Disposal Zone Certer 14°24 0' S x 170° 38.3' V	Minu Eest @ 10 - 15 ks.
14 26.14 \$		

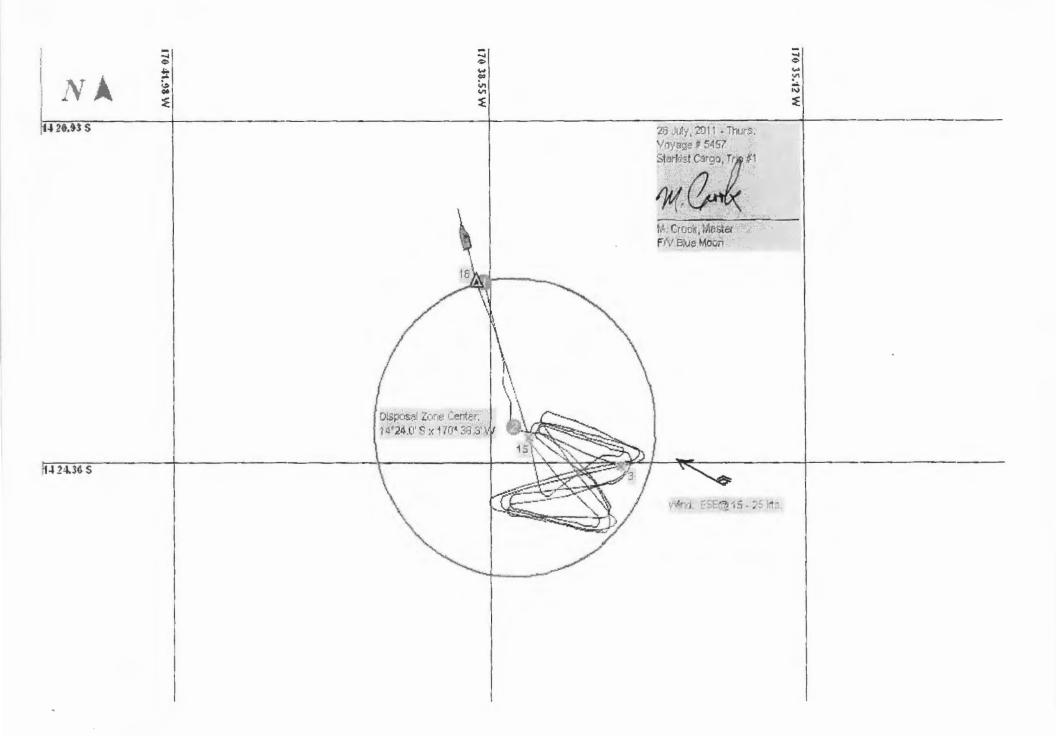
	Date:	07/23/11 sat.			FΛ	/ Blue	Mac	n Ocear	Dumping	a Loa	Vova	age #	f: 5455	
	Time							3-01 & OD 93-		3 ···· · · ·	/	3 -		
1/22	(535	Begin 1st Loading SK							Volume Los	aded: SK	188	750		Gallons
11	2145	Finish 1 st Loading SK				Trip #1-	X			Oth		<u></u>		Gallons
aha	0110	Begin 2 rd Loading SK				Trip#2	was a second	•••		Tot	al 188.	750		Gallons
1120	0300	Finish 2 rd Loading SK						**			<u> </u>			
			WP#	GP	S Posit			Wind	% Clouds	Barometer	Swell		Speed	Course
	0515	Depart Starkist		14*16.50		170* 41.2		Calm	13.5	29,5		Metric	kts	True*
	0610	Arrive Edge of Zone	#1	14*22.57				11	60	129.50	ESE	-1.6	8.6	163
	0818	Arrive Zone Center	#2	14*24.0		170*38.3		C)	15		9	17	8.3	158
	0625	Begin Discharge	#3	14*24.00	<u>('S</u>	170*3 7.		- 1	1		7	\ <u>X</u>	8.7	096
	1140		# 4	14.53'2	7'S	170*37,		4	ч				8.6	178
	453	Remarks:	# 5	14*24.2		170*36	W.13	11	U				8.5	රාවල්
	0710		#6	14*23.2	918	170*3.7			50				87	177
	25		#7	14°2 4. P	2′ S	170*3 7.	10 W	1 - 1	(i	1		5	8:4	031
	40		#8	14*23.00	S	170*3 7/	33 'W		U	27.60			18.8	318
	55		#9	14'2 4.7'		170*37.		ENE- 3	60	1)			7.1	179
	04/0		# 10	14*23, 3		170*37,		4 7	70	4			8.9	324
	08/0		#11	14*24.7		170*3 7	22_M	ENE-5	U.	1 4			8.9	1P3
	4/Q 35		# 12		4,2	170*365	13.M	e u	60			10	1 - 1	002
	35			T 7		170*3'7.(4) 11	C.	1 (-			9.5	176
	0710 25 40		# 14			170*37.		فا را	50				9.3	354
	25			14*2		170*3	, W					I.		
	40			14*2		170*3	W							
			# 17			170*3	W					15		
			# 18			170*3	W							
				14*2		170*3	W							
			# 20	14*2		170*3	W							
			-	14*2		170*3	W							
				14*2	S	170*3	W					20		
				14*2		170*3	W	<u> </u>						
	0720	Finish Discharge	# 5		<u>3′ s</u>	170*3 7.	76' W	ENE-5	50%	27.60	ESE	-1.0	9.2	337
	0723	Exit Discharge Zone	#16			170*37-		n d	cl	Į l	V	Lq.	9.5	338
	1015	Secure SK Dock	,L,	14*16.50		170*41.2'		1						
	Current Dire	ection: At Center 💋	201	<u>~</u>	End	of Discha	arge 🛚 🗸	pot-0/00	Disc	harge Patte	nElli,	05R	<u>/</u>	
	Total Disch	ection: At Center <u>(/)</u> arge Time: <u> 175</u> m	ins. /	Average S	peed [During Dis	scharge	<u>8.9</u>	_kts. Total T	ime Run	,0 /	hr.		
	Navigationa	Il Plot made: VOS	Pres	ence of Pl	lume?	No							A	
		osition of any floating r			,			Discharo	e Rate: 121-	2 Gallons	/min/kt	_	Λ	
		currences? Norle		AI. 71070				Discribing	S Nate,	Canons	77 MILITE	,0	//	
				1100	2.84.6	/		and the same of th		Direct Ad	In	1. 1/1	OM/C	
	Notification	s made: A.S.P.A	V	U.S.C.G	.M.S.	.D			Master: F/V	Rine Moou	10		5.000	



Date:	07/26/11 Tues.		F∕V Blue Mo	on Ocea	n Dumpin	g Log	Voyage	#: 5456				
TimePermit # OD 93-01 & OD 93-02												
- 1900	Begin 1st Loading SK				Volume Loa	ded: SK	157,750	O	Gallons			
2150	Finish 1 st Loading SK		Trip # 1 - X			Other	0		Gallons			
, 0100	Begin 2 nd Loading SK		Trip # 2	-		Total	157,750)	Gallons			
0430	Finish 2 [™] Loading SK		# (William State Control of the Cont	n.a					_			
		WP#	GPS Position	Wind	% Clouds	Barometer		Speed	Course			
0525	Depart Starkist		14*16.50' S 170* 41.2' W	E0-57-10	10-0	29.54	Metric	kts				
0620	Arrive Edge of Zone	#1	14*22.56 S 170*38.67 W		11	29.55	E42E-1.5	8.6	160			
0640	Arrive Zone Center	#2	14*24.0 S 170*38.3 W		d	4.	(1 -1	8.5	164			
0640	Begin Discharge	#3	14*24.07 'S 170*37.21'W	East-12-	90	29,56	u rx	2000 - N. C.	090			
" 35_		#4	14*2.3, 80'S 170*3 7.65'W	u a	141	29.5-7	() ()	8.6	177			
6710	Remarks:	#5	14.25.16, S 170.37.49 W	4 4	1			8.1	041			
1, 522		#6	14*2 3, 20' S 170*37, 13' W	1			1.1.1	8.5	305			
" 40 " 55 0410		#7	14*2 4.61' S 170*37.71' W		1		5	8.6	181			
1,55		# 8	14*23.39 S 170*37.69 W	1-1			1-9-1	88	1342			
0410		#9	14*23,55 'S 170*37.75 W 14*24.68 S 170*36.78 W	1	89			8.7	783			
. 25		# 10	14*24.68 S 170*36.98"W		70 60			189	782			
" 40		# 11	14°23.16' S 170°37.76' W	100	60	2758		9.0	182			
v 55		# 12	14"2 4. 86 S 170"37, 6 W	11 21	SO	,	10	3.8	315			
0910		# 13	14*2 327'S 170*3.7.08'W	Q 1)		"	\	7.2	312			
25			14*2 S 170*3 W	ļ		1						
" 40			14°2 S 170°3 W									
			14*2 S 170*3 W									
		# 17					15					
			14*2 S 170*3 W			<u> </u>						
			14*2 S 170*3 W									
		# 20	14*2 S 170*3 W									
			14*2 S 170*3 W									
			14*2 S 170*3 W				20					
		177	14*2 S 170*3 W	1	<u> </u>							
0915	Finish Discharge	#14	1423.00' S 1703 7.61' W	Enst - 15	50 %	32.22	E156-1.5	7.1	263			
0919	Exit Discharge Zone	#15	14-2 2-64' \$ 170-37.98' W	u [[4	li li		9.3	339			
1025	Secure SK Dock		14*16.50' S 170*41.2' W									
Current Dir	ection: At Center 🕕	201	End of Discharge \\	lest	Disch	narge Pattern_	Ellipse					
	- W	- 1	Average Speed During Discharge	1		ime Run_5.0	*					
			1 /	s	_kts. Total II	ille Ruit_ 3.0	111.					
	al Plot made: VSA		sence of Plume?/vo		. (~)							
	osition of any floating r		H: None	Discharge	Rate: [] [Gallons/m	in/kt.	,1				
	courrences? Non						Dal () a	1/1//				
Notifications made: A.S.P.A. U.S.C.G.M.S.D. Master: F/V Blue Moon												
								,				

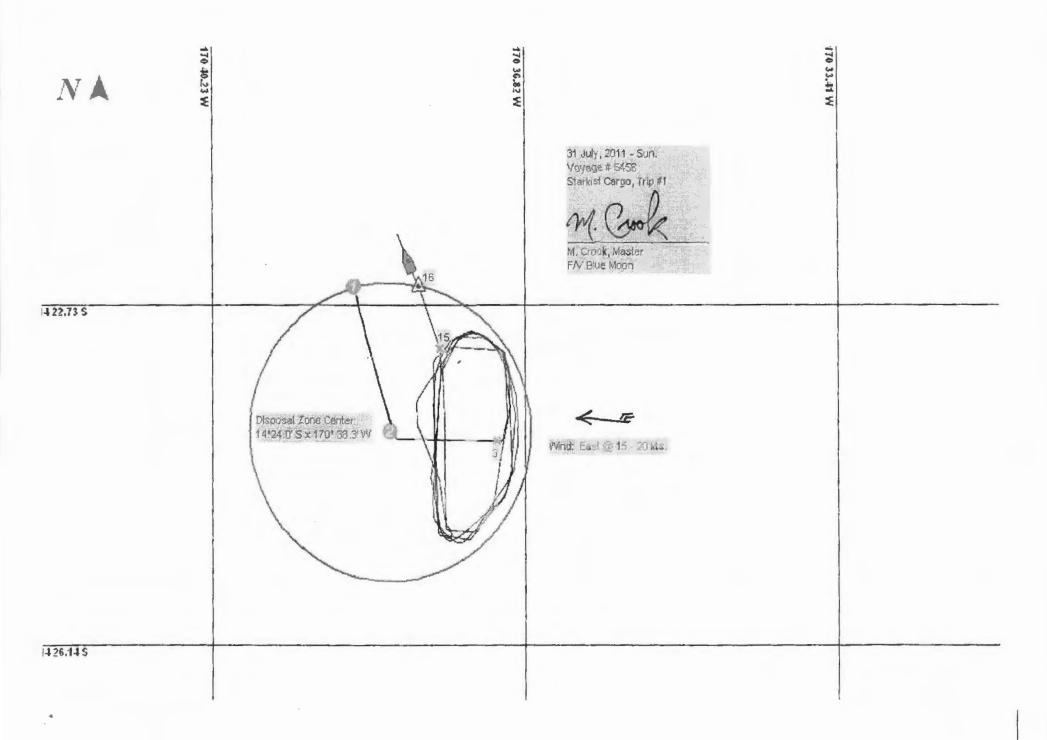


	Date:	07/28/11 Thurs.		F	√ Blue Mo	Moon Ocean Dumping Log Voyage #: 5457					
	Time				Permit # OD 93		•				
7/27	1630	Begin 1 st Loading SK					Volume Loa	ded: SK	79/12.	50	Gallons
1107	2145	Finish 1" Loading SK			Trip # 1 - X			Other	0,110		Gallons
	0100	Begin 2 rd Loading SK			Trip#2	****		Total	191,250		Gallons
7/28	0200	Finish 2 rd Loading SK									~
			WP#	GPS Posit		Wind	% Clouds	Barometer	Swell	Speed	Course
	0545	Depart Starkist			170* 41.2' W		100 - Rain	29.62	Metric	kts	True*
	0643	Arrive Edge of Zone	# 1	14*22.57'S	170*38.61 W	IEZE-SO	100	29.65	ESE-3.0	7,8	/62 /53 //5
	0653	Arrive Zone Center	#2	14*24.0 S	170*38.3 W)	29.65	1	7,5	/33
	0703	Begin Discharge	#3	14*24. 37'S	170*3·7·28 W	ESE-25	1	.,	\ \ X	7.3	1/5
	7 /8 33 48		#4	14 2 4 91 S	170*3'7'87' W	1 3		1.1		7.6	1078
	33	Remarks:		14*24,23'8		1 -1 -1	1 /	11		8.7	305 256
	48		#6	14.2 4.61'S	170*3 7.67 W			27.66		8.8	256
	10803		#7	14*24,96 S	170*37.62′W 170*37.74′W 170*38.4′W		1	35	5	7.4	1/6
	" 18		# 8	14*2 %.08/S	170*3">4/ W	1//	96	1		7.1	097
	133		#9	14*24,56 S	170*38.11 W	1 (11	29.67		7.9	252
	" 48		# 10	14°24.67'S	170*3 7.7 ('W		3)	Lt		9.3	321
	0903		# 11	14*24.00' S	170*37.45 W		11			9.7	708
	3 8		# 12	14*24.65' S	170*38.33W		80		10	7.4	249
	" 33		# 13	14-24,4915	170*37,48° W		21			9.7	313
	1003		# 14	14*24.06'S	170*37.60' W	1 1	90			8:5	104
	1003		# 15		170*3 W						
			# 16		170*3 W						
			# 17		170*3 W				15		
			# 18		170*3 W						
			# 19		170*3 W						
			# 20		170*3 W						
					170*3 W	<u> </u>					
					170*3 W				20		
				14*2 S	170*3 W						
	1003	Finish Discharge	#15	1424.15' S	170*3 8.() W	556-25	75 %	27.67	ESE-3.0	9.4	339 336
	1013	Exit Discharge Zone	#16	1422 2. (2 S	170*38,67'W	(1	1000	L\$	ec 4	9.4	336
	1105	Secure SK Dock		14*16.50' S	170*41.2' W	<u> </u>					
	Current Dire	ection: At Center M	N	End	of Discharge_A	/ω	Disch	narge Pattern	FIGURES	<i>></i>	
	Total Disch	arge Time: 180 m	ins. A								
	Navigations	Dist made: 1/2 4 -	Droc	ones of Dlumo?	1/2						
	Time and po	osition of any floating r	nateria	il: None		Discharge	Rate: 124	Gallons/m	in/kt.		
	Unusual Oc	currences? Nov	2				1			.0	
	Notifications	s made: A.S.P.A/		U.S.C.G.M.S	.D. 🗸		Master: F/V	Blue Moon	M. Cro	OC	



	07/31/11 Sun.			F/					Dumpir	ng Log	Vo	/age a	4: 5 45 8	
Time					Permit	# OD 9	3-01 & C	D 93-						7
1600	Begin 1" Loading SK								Volume Lo		10	1,250)	Gallons
2140	Finish 1st Loading SK				Trip # 1 -	X				Other	0			Gallons
0030 0210	Begin 2 rd Loading SK				Trip#2	· · · · · · · · · · · · · · · · · · ·				Total		1,250)	Gallons
0210	Finish 2 rd Loading SK												- 1	
A mark		WP#		S Posi		21.	Wind		% Clouds	Barometer	Swell		Speed	Course
0550 0645	Depart Starkist	1	14*16.50		170° 41.		East	-10	75	29.61	+	Metric	kts	
0642	Arrive Edge of Zone	# 1	14*22.5	6 S	170*38.	67 W	Gast		50	и -	Far	4-1.5	8.6	162
0654	Arrive Zone Center	# 2	14*24.0	<u> </u>	170*38.	3 W		- н		29.62	+		8.4	159
0705	Begin Discharge	# 3	14*24.1	0 S	1/0*37.	23 W	**		40	L.	11	и X		090
40		#4	14*2'3.9	6. S	170*3'7	70' W	1		1		1		8.6	000
35 50	Remarks:	# 5	14*24.3	7/5	170*36		+		1	_ _	+-		8.4	1000
20		# 6	14*23.7	6 S	170*3 7				tı.		4		0-1	1/40
0805		#7	14*24,4	P'S	170*37		+	+	30_		4	5		0.39
<u> </u>		# 8	14*2 3,1	7.8	170*37.	32 W	+		Li Li				8.9	272
35		#9	14*2 4,5	TS	170*37.	AP. M	1	1	11				8.5	95/
50		# 10	14*23.5	5 8	170*36	-18, M				10000			7:/	358
0905 20 35		# 11	14*24.6	7' 5	170*37	83. M	11	- 10		27.63	++		9.0	18/
20		# 12	14.24.0	7 S	170*37.	of W	1	11	40	L3	+-+	10	8.9	006
35_		# 13	14*2 3,9	7.8	170-3-7	47 W				- 1	4		35-	167
50		# 14	14*2 4.1	9 8	170*3 7		- "						7.4	003
1005		# 15		S	170*3	W					+			
		# 16		S		W			 				-	
		# 17		\$	170*3	W			 			15		
		# 18		S		W					 		ļ	
		# 19		\$		W							1	
		# 20		S		W	-		-	_	+			
			14*2	S		W					-			
			14*2	S	170*3 170*3	<u>W</u>	-		-			20	1	
MOTE	Civia h Disahara	#15	14*2 14*2*3				Cant	7-	40%	25.63	-	L I.E	9.3	353
0935	Finish Discharge									- 41.00	Los	K15	9.3	357 337
1000	Exit Discharge Zone	#16	14.2 2.	PO 5	170*41.2	-1/ W		11			+-	*4	1.3	
1055	Secure SK Dock	1	14*16.50				10.				-/	7		
Current Di	rection: At Center <u>W</u>	24		End	d of Disch	narge <u>U</u>		_		charge Pattern		1 pure		
Total Disch	narge Time: <u>[70 n</u>	nins. A	Average S	Speed	During D	ischarq	e: 8	.8	kts. Total	Time Run 5-1	5	ĥr.		
	al Plot made: Yes		-		L /						- 7.			
					770	-			2 101	0 " - 1	· . d .		٨	
	position of any floating floa		al: Nov	<u>رق</u>			Dise	charge	Rate: Id	Gallons/n	nin/kt. - ∤ / / /	P		
Notification	ns made: A.S.P.A. v		U.S.C.	G.M.S	S.D. V	/			Master: F/	V Blue Moon	W	. Mil	\mathcal{M}	

.



OCEAN DUMPING MONTHLY SUMMARY

F/V BLUE MOON	/	August, 20	011	
NUMBER OF TRIPS:	Starkist 10	Other 0	Joint 0	TOTAL:
GALLONS-FOR THE MONTH:	Starkist 1,670,500	Other 0	Joint 0	TOTAL: 1,670,500
GALLONS FOR SOLO TRIPS:	Starkist 1,670,500	Other 0	_	
RUNNING TIME ON TRIPS:	53.3 hrs.			
DISCHARGE TIME ON TRIPS:	28.33 hrs.			
AV. GPM DISCHARGE RATE:	112.9 gal/min/kt			
AV. TRIP TIME:	5.33 hrs.			
AV. PERCENTAGE OF VESSEL	USED BY EACH CAI	NNERY - BY	GALLONAGE:	
Starkist Other				

MASTER

	Date:	08/03/11 Weds.			F	V Blue N			,	ng Log	Voy	age	#: 5459	
,	1810	Begin 1 st Loading SK				Femili # OD	50-01 ¢	OD 33-0	Volume Loa	ided: SK	153	250		Gallons
8/2	2145	Finish 1" Loading SK				Trip # 1 - X			Volume Loa	Other		200		Gallons
,	0200	Begin 2 ⁿ³ Loading SK				Trip#1-A				Total	0	250)	Gailons
8/3	0430	Finish 2 nd Loading SK				1110#2				TOtal	12 2/	90 C		Gallons
- ()	100	Caning Sk	WP#	GPS	Posit	ion	Wind		% Clouds	Barometer	Swell		Speed	Course
	0515	Depart Starkist		14*16.50		170* 41.2' V		Im	20	27.52		etric	kts	True*
	0605	Arrive Edge of Zone	#1	14*22.	´S	170*38. (V	V "		10	1,	East	-1.0	8.7	/63
	0613	Arrive Zone Center	#2	14*24.0				st-3	1,	le	11	ч	8.6	161
	0620	Begin Discharge	#3	14.23.78		170°3°7.22 V	1 11		u	ч	lı.	4 X	8.8	090
	11 3.5		#4	14.2 3.67		170*3.7.66 V)	t ^s	11)	7	8,7	179
	450	Remarks:	#5	14*24.37		170*36,89'V		7	15	31		1	8,5	357
	0705		#6	14*23,39		170*3 אין ער אין ער	1	(u	27,63	 	+	8.6	183
	1 20		#7	14.24.66		170*36,93 V	/ Ear	1-5	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1	11	4 5	8.8	358
	" 3s		#8	14*23.52	S	170 3 7.35 V	/	1	17	51		-	8.7	2/6
	" 50		# 9	14*24,851	S	170*37.08'V			30	þ	T		3.7	2/6 022
	0805		# 10	14*23.24	S	170*37,19 V	1 /		11	*1			8.6	307
	" 20		# 11	14*24.70	S	170*37, T4 V	1	(,	14	1.			9.6	176
	1 35		# 12	14.23.68	'S	170*36.9(V	1		30	7.5		10	9.1	351 180
	"50		# 13	14*24.52	S	170*37,53V	1	1	47	*1			9,5	180
	0905		# 14	14.23.68	S	170°3 653' V	/			2(8.9	334
	~ an		# 15	14*2	S	170*3 V								
			# 16	14*2	S	170*3 V	1				T			
			# 17	14*2	S	170*3 V	J		1			15		
			# 18	14*2	S	170*3 V	/							
			# 19	14*2	S	170*3 V	/							
	!		# 20	14*2	S	170*3 V	/			İ	i			
				14*2	S	170*3 V	/							
				14*2	Ś	170*3 V	J				1	20		
				14*2	S	170*3 V	/		*					
	0910	Finish Discharge	#15	14*2 3.79 '	S	170-37.27	W FOJI	- 5	₹0€	29.63	Enst-	1-0	9.1	331
	0912	Exit Discharge Zone	HK.	14-2 2 91	r s	170-37.33	WIL	1 - 5 -	-	-1	24	4	9.1	331
	1016	Secure SK Dock	15.0	14*16.50'		170*41.2' W					1			
		ection: At Center W.	rit.			of Discharge_	W2AT	12600) Disch	arge Pattern_	Elling	φ,		•
	·	- UTA			LI IU	or Discharge_	Sand	23.4) Disci	ange : alleill_	3			
	Total Disch	arge Time: <u>170</u> m	ins. A	Average Spe	ed [During Dischar	ge:	2.1	_kts. Total Ti	me Run <u>4.</u>	\mathcal{I} _hr			
	Navigations	I Diot made: VO A	Dres	ance of Dlu	ma2	No				•				
	Time and n	osition of any floating r	nateria	1. None			Di	scharge	Rate OI	5 Gallons/m	in/kt	-	Λ	
	Unusual ∩o	courrences?	∧ Q.					condige	,		Call.			
				11000	14.0	5			Manta: Ear	Diva Ma	3 MI	1/1	HHZ.	
	Notification	s made: A.S.P.Ai/_		_ U.S.C.G.	IVI.S.	I.S.D. Master: F/V Blue Moon								

	Date:	08/05/11 Fri.			=/V	Blue Mod	on Ocean	Dumping	Log '	√oyage #	5460	
	Time					Permit # OD	93-01 & OD 93-	-02	, 0	, ,		
8/4		Begin 1 st Loading SK						Volume Lo	aded: SK	176,250)C	Gallons
0/7		Finish 1" Loading SK				Trip # 1 - X			Other	0		Gallons
سو ر ت	6000	Begin 2 rd Loading SK				Trip#2	*************		Total	176,25	Ó	Gallons
F15	0200	Finish 2 rd Loading SK								,		_
	A *	Daniel Charlist	WP#	GPS			Wind	% Clouds	Barometer	Swell	Speed	Course
	0565	Depart Starkist	# 4	14*16.50'		170* 41.2' V		20	33.54	Metric	kts	True*
	0610	Arrive Edge of Zone Arrive Zone Center	# 1	14*24.0	->	170*38.66′V			29,55	East-1:0	P.S.	169
	06/8	Begin Discharge	# 3	L		170°38.3 V			11	17 7 X	4:3	
	0627	begin Discharge	# 4	14*2 4.16					" u	 	8.2	090
	4 57	Remarks:	# 5	14*2 3,52	3	170*37,76' W	·	+	27.56	 	8.6	1250
	0712	Tremains.	#6	14*23.25	75	170 3 7.67 V	1 4 11	 	121:35	+	8.4	350
	" 27		# 7	14-24.80		170*36,97° W			17	1 7 / 5		013
	42		# 8	14.23.03		170*37,43'W		 	<u>'</u>	 	8.7	258
	11 57		#9	14*23.97	'S	170*37-77 W			žĮ,		8.9	258
	ORIZ			14*2'3 34		170-37.07' W		1	- 1	 	8.7	309
	"aT			14*24.56	S	170*37.57'W		 	:1	+	7,5	177
	" 42			14*23,34		170°37.00 W		1	29.57	10		341
	" 57			14-24.23		170 37,60' W				1	9.7	178
	0912			14.23.90		170°3697W					9,2	356
	27			14*2	S	170*3 W						
			# 16	14*2	S	170*3 W	/					
			# 17	14*2	S	170*3 V	/			15		
				14*2	S	170*3 V						
				14*2	S	170*3 V						
			# 20	14*2		170*3 W						
				14*2		170*3 V						
				14*2		170*3 V				20		
	65153		-	14*2	S	170*3 V	1					-
	0913	Finish Discharge	#15	14.5 3,00	′ S	170*3 7.38"	N ENE-12	200%	29.57	Fost-1.0	9.0	299
	0923	Exit Discharge Zone	#16	14.22.66	, S	170.3 7.70	N 11 #	Ч	14	7, 10	8.8	323
	1012	Secure SK Dock	 _	14*16.50'		170*41.2' W				<u> </u>		
		ection: At Center W				of Discharge_		Disc	harge Pattern_	Ellipse_		
	Total Discha	arge Time: <u> 71 m</u>	nins 4					kts Total T	ime Run 5.	O hr		2
	No. death and	I Disk made: VOI				A a	90	KG. FORM	inc run			
	_	l Plot made: Y &	•	. /				11-	7			
	Time and p	osition of any floating r	materia	al: None			Discharge	e Rate:	Gallons/m	in/kt.	Λ.	
	Unusual Oc	currences? Nona						/		M.P		
	Notifications	s made: A.S.P.A.	£	USCG	MS	D 🗸		Master: FA	Blue Moon	1///	runny 8	

		21.10									
	Date:	المع <i>ان (11/0/1</i> /08/	Ρ,	EA/ Blue Mc	on Oc	war	Dumnin	a Loa	Voyage	#- 5/61	
		00/70/11 Tabs.		F/V Blue Mo				g Log	voyage	#, 5 4 01	
. ,	Time	Danin 48 Landing CV		Permit # OD 93	3-01 & OL	93-0		idadi OV	12/ 75		Gallons
8/9	1635			Train 46 A V			Volume Loa		186,75	()	-
* !	0230	Finish 1" Loading SK Begin 2 rd Loading SK		<u>Trip # 1 - X</u> Trip # 2				Other Total	18/50	<u> </u>	Gallons Gallons
8/10	0900	Finish 2 rd Loading SK		TIP#Z	-			TQtal	186,750	<u> </u>	Joanons
0/10	0 700	I IIII3112 Loading OK	WP#	GPS Position	Wind		% Ciouds	Barometer	Swell	Speed	Course
	0528	Depart Starkist		14*16.50' S 170* 41.2' W		10	25	29.59	Metric	kts	True*
	0520	Arrive Edge of Zone	# 1	14*22.63' \$ 170*38.65 W		12	41	1	Est-1.5	8.4	162_
	0637	Arrive Zone Center	#2	14*24.0 S 170*38.3 W	Ct.	Ц	· ·	U	r in	8-1	157 070 177
	0636	Begin Discharge	#3	14*24.64 S 170*37.19 W	Foot	15	μ,	27.60	., ,, X	80	090
	51		# 4	14*24.1/ S 170*37.69 W		ζĺ	1	27.61	, II	8.6	177
	0706	Remarks:	# 5	14*24 87'S 170*37.13' W	il	1)	L1	ţe.	n 13	811	021
	21		#6	14-22, 93 S 170-37.64'W	1	4	(1	1	1 1	Fil	240
	36 S1		#7	14"24,8('S 170"3"769 W	$\perp \downarrow$. Fr		5		18(
	51		#8	14*23,5'S 170*37.14, W	+ <i></i>		L1	 	 	8.5	352
	0206	>	# 9	14*23,63'S 170*37, R' W	+			-/	 	£8	183
	36		# 10	14*24.04' S 170*37.08' W		- 100	(8,6	356 180
	36		# 11 # 12	1423.61 S 170*37.95 W	East.	- <i> </i> R	30	 	10	8.7	
	50		# 12		Fr. D.	7		 	1 1 10	9.8	356
	0906		# 14		East.	-20	,	 			772-
	36	A	# 15	14*2 S 170*3 W	+				<u> </u>	8.7	1/2-
	36		# 16		+						
			# 17	14*2 S 170*3 W	+				15		
			# 18		+						
			# 19								
							:				
				14*2 S 170*3 W	T						
				14*2 S 170*3 W	1				20		
				14*2 S 170*3 W							
	0935	Finish Discharge	#15	14.23.24' S 170.37.84' W	Enst	-20	30	29.61	East-1.5	7.3	00/
	0939	Exit Discharge Zone		14.2 2.66 \$ 170.3 7.82 W		41	4	ε,	u a	9.2	338
	1030	Secure SK Dock		14*16.50' S 170*41.2' W							
	Current Di	rection: At Center (1)	ent	End of Discharge (1) 24		Discl	narge Pattern_	Ellipse		
	Total Disc	harge Time: 179 m	ine	Average Speed During Discharge		.6	kts Total T	ime Run 🥌 I	5 hr		
		•		, ,		_~	_nto. Total I	inie itan <u>3- j</u>			
				sence of Plume? 10			~ . <i>1</i> 01	7			
				al: None-	Disch	narge	Rate: / o [3_ Gallons/m	in/kt.	^	
		occurrences? None			AND THE PARTY AND				all P	() _	
	Notification	ns made: A.S.P.A <i>U</i>		U.S.C.G.M.S.D			Master: F/V	Blue Moon	IV. Car		

Time	Date:	08/12/11 Fri.		EA/ Plus Ma	on Occan	Dumping		Voyago #	E460	
		UO/12/11 Fri.					Log	voyage #.	5402	
	1/2	Begin 1 st Loading SK		remm # OD	33-01 & OD 33-0		aded: SK	194,000		Galtons
O C C C				Trin # 1 - Y		Volume coe				
	The second second							184 000		-
Separt Starkist	- 025						10141	10 1100		
CFIC Arrive Edge of Zone #1 14*22.5\$ \$ 170*38.6\$ W FCAT-7 30 " SFE. \$ 3.7 /6.2 OC/\$ Arrive Zone Center #2 14*24.0 \$ 170*38.3 W L L L L L L L L L L L L L L L L L L	70		WP# G	SPS Position	Wind,	% Clouds	Barometer	Swell	Speed	Course
CFIC Arrive Edge of Zone #1 14*22.5\$ \$ 170*38.6\$ W FCAT-7 30 " SFE. \$ 3.7 /6.2 OC/\$ Arrive Zone Center #2 14*24.0 \$ 170*38.3 W L L L L L L L L L L L L L L L L L L	0515				NCalm	25	29.62		kts	True
Arrive Zone Center	0610				N East-7	30	67	EJE-1.5	8.2	162_
### 14*2 \$ 170*3 W #### 14*2 \$ 170*3 W #### 14*2 \$ 170*3 W ##### 14*2 \$ 170*3 W ###################################	06/8							4 4	8.7	154
0.707 Remarks: #Josificial set #5 14*2 4.39* \$ 170*36; 3 W " " " 35 " (8.6 /78) " 22 Control Sample #6 14*23.35* \$ 170*37.77* W " " 35 " (8.6 /78) " 37 Amamor 1625 htt 7 14*24 fc 8 170*37.77* W " " 30 " 5 9.0 /4/ " 52 of position: #8 14*23.34* \$ 170*37.12* W " " 30 " 8.7 330 08 07 ff* 24.03* \$ x #9 14*23.43* \$ 170*37.82* W " " 30 " 1	0637							East-1.5X	7.5	632
" 37	1157	•				1		1 7	8.7	177
" 37 drawnot 0625 int 7 1424.76 S 170°3.7.70 W " 30 " 5 9.0 141	0.707	7 Remarks: Monitorians	#5 14*2 4.		¥			 		7.54
# 52		L Control Spenples	#6 14*23.	25' S 170*37:17V				1		178
0867		drawnot 0625 he	# 7 14"2 4.					1 5	9.0	
22	20				V 11 1			 	8.7	
" 37 # 11 14*23 . 19' S 170*37. 34' W " " " " " " " " " " " " " " " " " "	0807	1 19 29.03 S X				00	1	(
# 12 14*2 7.52 \$ 170*3 7.00 W East -12 10 9.1 00 3 0 10 7 # 13 14*2 3.13 \$ 170*3 7.28 W " " 25 29.65 7.0 315 # 14 14*2 \$ 170*3 W			# 10 14 2 9,			1	31:21			1222
0707 #13 14*2 3,13' \$ 170*3-7.28' W " " 25 27.65 7.0 3/5 #14 14*2 \$ 170*3 W " " 25 27.65 7.0 3/5 #15 14*2 \$ 170*3 W " " 15 14*2 \$ 170*3 W " 15 14*2 \$ 170*3 W 15 15 15 15 15 15 15 15 15 15 15 15 15						 		10		10/2
# 14 14*2 S 170*3 W * 37 # 15 14*2 S 170*3 W # 16 14*2 S 170*3 W # 17 14*2 S 170*3 W # 18 14*2 S 170*3 W	250			131 S 17037100 V		1	120	10		
* 37 # 15 14*2 S 170*3 W # 16 14*2 S 170*3 W # 17 14*2 S 170*3 W # 18 14*2 S 170*3 W # 15 # 18 14*2 S 170*3 W # 18 1	010		# 13 14 2 31	S 170*3 /. 24 V		23	100		7, 0	312
# 16 14*2										
# 17 14*2	3/							<u></u>		
# 18 14*2 S 170*3 W								15		
# 19 14*2 S 170*3 W										
# 20 14*2 S 170*3 W					V					
14°2 S 170°3 W										
14*2 S 170*3 W 20			14*2	S 170*3 V	V			20		
14*2 S 170*3 W			14*2	S 170°3 V	V .					
0922 Finish Discharge #14 14-24.51' \$ 170-37.07' W East-12 35% 29.65 East-1.5 9.4 042	0922	Finish Discharge	#14 14-24.5	51' S 170+37-07'	W East-12	35%	29.65	East-1.5	9.4	042
1038 Exit Discharge Zone #15 14.2 2.64' \$ 170.38.73' W East-15 " 27.63 " 7.3 341	1038			64' S 170'38.73'		L		4 (/		341
11.36 Secure SK Dock 14*16.50' S 170*41.2' W	1130			S 170*41.2' W						
Current Direction: At Center Was End of Discharge WEST Discharge Pattern Ellipse	Current Di	rection: At Center (1)%	47	End of Discharge	West	Discl	harge Pattern	Fllinge		
Total Discharge Time: 65 mins. Average Speed During Discharge: 8 8 kts. Total Time Run 6.25 hr.			P - 1					25 hr.		
Navigational Plot made: VRAD Presence of Piume? \(\sqrt{O}\)				, /	3					
Time and position of any floating material: Nove Discharge Rate: 26 T Gallons/min/kt.			4 (Diachara	Pate 126.	7 Gallanain	sin/k+ ^	\wedge	
Unusual Occurrences? \sqrt{SNS}			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,	Discharge	rate. Toto	/ Gallotis/ir	04/		
Notifications made: A.S.P.A. V U.S.C.G.M.S.D. i Master: F/V Blue Moon				GMSD i		Master EM	Blue Moon	114-121	04/	

	Date:	08/16/11 Tues.			F/	V Blue	Mo	on O	cear	ו Dumpir	ng Log	Voyage	#: 5463	
	Time					Permit #	OD 93	3-01 & O	D 93-0)2				
8/15	1830	Begin 1st Loading SK								Volume Loa	aded: SK	110,500		Gallons
0100	1930	Finish 1" Loading SK				Trip # 1 - X					Other	0		Gallons
1111	0945	Begin 2 rd Loading SK			,	Tnp#2					Total	110,500		Gallons
3/16	1245	Finish 2 rd Loading SK												
			WP#	GPS				Wind		% Clouds	Barometer	Swell	Speed	Course
	1300	Depart Starkist		14*16.50'		170* 41.2'	W	Enst	-7	30	27.58	Metric	kts	
	[353	Arrive Edge of Zone	#1	14*22.58	S	170*38.6	3, M	ENE-	- /Q_	1	- Q	Eost-1.0	8.8	150 158
	1405	Arrive Zone Center	# 2	14*24.0		170*38.3	W	NE-		40	4		8.7	158
	1413	Begin Discharge	#3		S	170*37.3	('W	11	11	1.	t:	X	185	045
	4,58		# 4	14*23,35		170*37.8		Fr.	CA	r)	29.57		8.6	135
	× 43	Remarks:	# 5	14*23,141		170*37.2		Ч			34.22		11	3(0
	58		#6	14.53.48	S	170*37.8		٤,	-(ļ <u> </u>	29,53		8.7	138
	1213		#7	14*23.39	S	170*3 7.0	o' W	-}	_/_	30	Lr Ci	5	9.3	320
	, 38		# 8	14.5 3,46,		170*37.8		-	4-				8.8	/34
	" 43 " 58		#9	14*23,60	S	170*37.0		 	_)		27:52		9.4	34/
	58			14'23,13'	S	170*3 کار				(1	"R		9.3	152
	1613		# 11	14-24.28	S	170*36.9(, M	-		25	<u>"</u>		8.7	003
	* 38		# 12	14.23, 07		170*38-1						10	7.0	140
	" 43		# 13	14*2		170*3	W							
			# 14	14*2		170*3	W							
	1713			14*2		170*3	W	ļ						
			# 16	14*2		170*3	W				-	4.5		
			# 17	14*2		170*3	W					15		
				14*2		170*3	W	<u> </u>						
				14*2		170*3	W	<u> </u>					1	
			# 20	14*2		170*3	W	 						
			_	14*2		170*3	W					20		
			-	14*2		170*3	W							
	1200		11.5	14*2		170*3		1/100		0= 01	30 6 3		0	231
	1643	Finish Discharge	#13	14.27-78	· S	170*38-0	<u>~</u> ∧	NE	10	25 %	29.52	East-1.0	160	332
	1645	Exit Discharge Zone	#14	14.2 2.55	S	170*38 (3	7. W	<u> </u>					1.6	13day
	1735	Secure SK Dock	1	14*16.50		170*41.2'		1		<u> </u>		=111 =		
		rection: At Center Sot		1621	End	of Dischar	rge	> W_			harge Pattern_		<u>, </u>	
	Total Disc	harge Time: <u>/SO</u> rr	nins /	Average Sne	ed F	Ourina Disc	charge	9	.0	kts. Total T	ime Run 4.	6 hr.		
	N 1'	of Distance (-)				N /.	J. 10. 9					- Allerton Brade		
		nal Plot made: Yes		,	me'.	1 40				- 80				
		position of any floating r		al: /Vova				Disc	charge	Rate: 0 🗡	Gallons/m		\wedge	
	Unusual C	occurrences? None	/									M. Ca	12/17	
	Notification	ns made: ASPA 🗸	,	USCG	MS	D 🗸				Master: F∆	Blue Moon	11. CO	100	

	Date:	08/18/11 Thurs.			F	/V Blue	: Mc	on Oc	ear	Dumpir	ng Log	Voyage	#: 5464	
	Time							3-01 & OD						_
8/17	1550	Begin 1 st Loading SK								Volume Loa	ded: SK	184,500)	Gallons
′′′′	2/45	Finish 1 st Loading SK				Trip # 1 - X					Other	0		Gallons
/ -	0/10	Begin 2 nd Loading SK				Trlp#2					Total	184,500)	Gallons
118	0225	Finish 2nd Loading SK		- 22				14.0				,		0
	0.00	D word Otavisiat	WP#	GPS			104	Wind		% Clouds	Barometer	Swell Metric	Speed kts	Course True*
	0520	Depart Starkist	-44 1	14*16.50' 14*22.		170* 41.2' 170*38.	W	Salm		15	29.59	East/NE-1.0		
	06/2	Arrive Edge of Zone Arrive Zone Center		14*24.0		170 36.	W	NE-7		17	dipl	n a	8.9	163
	062/	Begin Discharge		14 23,46				u iz	-	2 -	u	u c' X	3 2	045
	0630	begin Discharge		1423,441		170*3 7.8		1/ 1/	- 1	20	1	1 7 7	33	140
	0 45	Remarks:		14.23.77		170*36.36	C \V/	14 34		}	 	 	8.4	336
	0,700	IXCITIALING.		14-23.68	'S	170*39-2	/'W	1,				+	7.0	140
	" '3º		#7	14*24 . 52		170*3 7:15		N 10	-		 	5	8.7	099
	1 45			14.22.70		170*37.8		NE-10	2			+ / /	8.9	079 281 138 325 142
	0800		# 9	14.24.00	S	170*37.6		11			1		9-2	138
	15			14*23.35		170*3 7.0	3' W			1	29.61		9.0	325
	, 30			14-2 3-21	S	170*30	7' W			2.5	\		9.3	142
	" 30 " 45		# 12	14*23,86	S	170*36.9	1' W			ų		10		336
	0900		# 13	14-22,65	'S	170*38.3	/ W			4			8.6	194
	" 15		# 14	14*2	S	170*3	W							/
	· 30			14*2		170*3	W							
				14*2		170*3	W							
			# 17		S	170*3	W					15		
				14*2		170*3	W							
				14*2		170*3	W							
			# 20	14*2		170*3	W			-				<u> </u>
				14*2		170*3	W							
				14*2	S	170*3	W					20		
	000		14.11	14*2		170*3	W	1.1-		A = 50	09.61	1= +111, ·	20	730
	0915	Finish Discharge	मिप	14.53.88	S	170*38	XI'W	NE-10)(25%	27.61	East NE-1.0	7.3	328
	0918	Exit Discharge Zone	#15	14-2 2. 59	r's	170*3 8.3	6 W		1	<u>"</u>		-1 11	9.3	331
	1010	Secure SK Dock	10-	14°16.50'		170*41.2						- 16:		
		rection: At Center <u>S</u> ೧				of Discha				Disch	narge Pattern	Ellipse		
	Total Discharge Time: 165 mins. Average Speed During Discharge: 81 kts. Total Time Run 4,85 hr.													
	Navigational Plot made: Y W Presence of Plume? 1/6													
	Time and position of any floating material: // ১٢٥ Discharge Rate: 125.6 _ Gallons/min/kt.													
	Unusual Occurrences? Name													
		ns made: A.S.P.A		U.S.C.G.	M.S.	.D. V				Master: F/V	Blue Moon	MI	MICH	
												[(

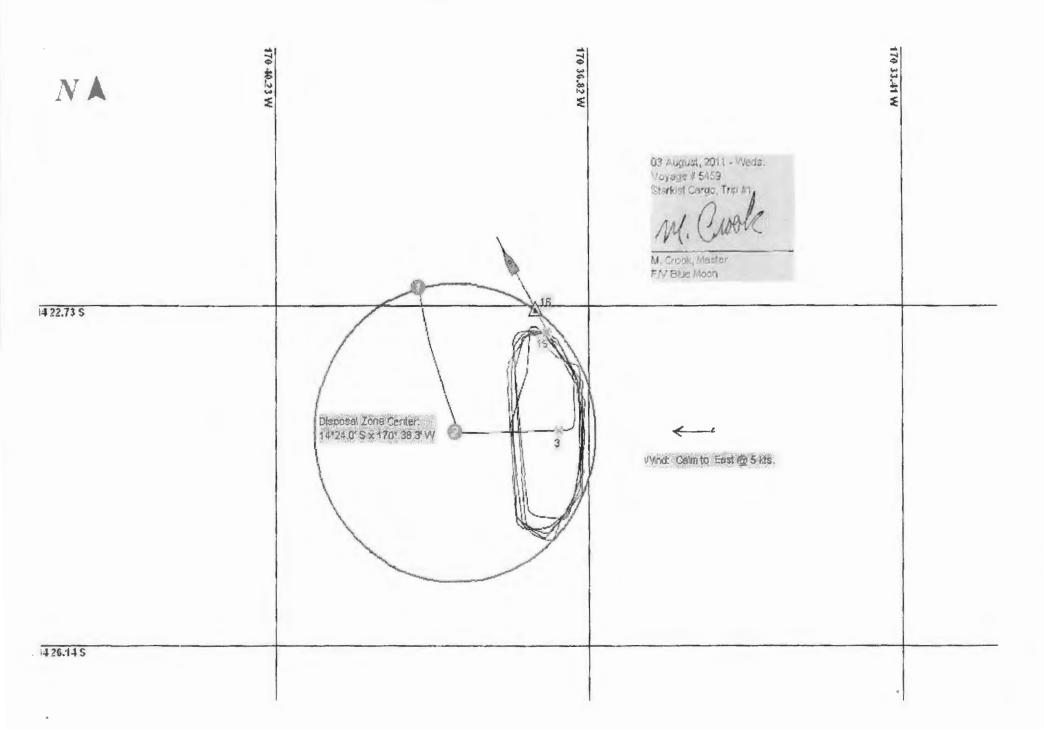
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Date: 08/24/11 Neds. F/ Blue Moon Ocean Dumping Log Permit # 0D 93-01 & 0D 93-02 Volume Loaded: SK Other Total 1/24								
1700 Begin 1" Loading SK 2/4/5 Finish 1" Loading SK Begin 2" Loading SK Begin 2" Loading SK Begin 2" Loading SK Trip #2 Total CO 750 Gallons Gallons Co 730 Finish 2" Loading SK Trip #2 Total CO 750 Gallons Gallons Co 730 Finish 2" Loading SK Trip #2 Total CO 750 Gallons Co 750 G								
2/45								
Segin 2" Loading SK Finish 2" Loading Sk Finish 2" Loading Sk								
Matrix Speed Spe								
O 5 3 D Depart Starkist 14*16.50' S 170*41.2' W 5E*25 90 Q 70 Metric kts True* O 6 3 Z Arrive Edge of Zone # 1 14*22.55' S 170*38.70 W * * * * * * * * * * * * * * * * * * *								
OGY 3 Arrive Zone Center #2 14*24.0 \$ 170*38.3 W								
OGY 3 Arrive Zone Center #2 14*24.0 \$ 170*38.3 W								
OC 53 Begin Discharge #3 14*2 4.36'S 170*37.25 W 11 11 11 11 12 14.24.36'S 170*37.25 W 11 11 11 12 14.24.36'S 170*37.25 W 11 11 11 12 14.24.36'S 170*37.25 W 11 11 11 14.24.36'S 170*37.25 W 11 11 14.24.36'S 170*37.25 W 11 11 14.24.36'S 170*37.25 W 170*37.25 W 11 14.24.36'S 170*37.25 W 170*37.25 W 11 14.25.06'S 170*37.25 W 170*37.25 W 170*37.25 W 11 14.25.06'S 170*37.25 W 170*37.25 W 17 17 17 17 17 17 17 17 17 17 17 17 17 17 17 17 18 17 17 18 17 17 18 1								
23 Remarks:								
23 Remarks:								
# 38 # 14 14*2 \$ 170*3 W # 302 # 38 # 6 14*24, 36 \$ 170*3 7, 18 W								
#9 14*2 4, 31 \$ 170*3 6. 18 W SE-30 W 7.1								
#9 14*2 4, 31 \$ 170*3 6.18 W SE-30 W 7.1								
#9 14*2 4, 31 \$ 170*3 6. 18 W SE-30 W 7.1								
#9 14*2 4, 31 \$ 170*3 6. 18 W SE-30 W 7.1								
# 11 14*2\$.\$\(\sigma\) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \								
" 38 # 14 14*2								
" 38 # 14 14*2								
" 38 # 14 14*2								
" 38 # 14 14 2 S 170 3 W								
10 40 4440 0 43040 141								
# 16 14*2 S 170*3 W								
# 17 14*2 S 170*3 W 15								
# 18 14*2 S 170*3 W								
# 19 14*2 S 170*3 W								
# 20 14*2 S 170*3 W								
14*2 S 170*3 W								
14*2 S 170*3 W 20								
14*2 S 170*3 W								
0938 Finish Discharge #14 1423.87' \$ 17038,19' W SE-30 606 29.73 SE: 3-3.5 7.3 334								
0945 Exit Discharge Zone #15 14.2 2 . 65's 170.3 8 . 63'W " " " " 7.6 33.7								
12/3 Secure SK Dock 14*16.50' S 170*41.2' W								
Current Direction: At Center NW End of Discharge Ne Rthwest Discharge Pattern Figure 8								
Total Discharge Time: 165 mins. Average Speed During Discharge: 8.3 kts. Total Time Run 6.75 hr.								
Navigational Plot made: V. M Presence of Plume?								
Time and position of any floating material: A an a Discharge Pate: 117.4 Gallons/min/kt								
Time and position of any floating material: None Discharge Rate: 17.4 Gallons/min/kt. Unusual Occurrences? North Figure 8' posternature to Rough Sec. 5.) Also, Fueling Notifications made: A.S.P.A. U.S.C.G.M.S.D. Master: F/V Blue Moon								
Notifications made: A.S.P.A. U.S.C.G.M.S.D. Master: F/V Blue Moon								

Date:	08/20/11 sat.		FΛ	/ Blue	Моо	n Ocean	Dumping	Log	Voyage #	: 5465	
Time						3-01 & OD 93-0					
1535	Begin 1" Loading SK						Volume Loa	ided: SK	158,200)	Gallons
2/40	Finish 1" Loading SK			Trip # 1 -)	<			Other	0		Gallons
	Begin 2nd Loading SK			Trip#2		no.		Total	158,250		Gallons
	Finish 2 rd Loading SK				v						-
		WP#	GPS Posit			Wind	% Clouds	Barometer	Swell	Speed	Course
0525	Depart Starkist			170* 41.2		Calm	20	29.62	Metric	kts	True*
0616	Arrive Edge of Zone	# 1	14*22.57′S	170*38.6	6. M	East-7	, ,	127.63	SEJW-1.5	136	/63 /6/
0627	Arrive Zone Center	# 2		170*38.3	W	Enst-10	14	29,64	11 (1	8.5	161
0635	Begin Discharge	#3	14*24.05 \$	170.37		li ü	40	11	et (1 X	8.7	090
" 50		# 4	14.2,3 77.8	170*37.8		£((t	10	29.65	SE- SW: 1.5	8.5	178
0705	Remarks:	#5	14 24, 821 S	170*37.[λ' W	1 7		(1		85	023
20		#6	14*22 .73' S	170*37.5		((50	29.66		8.4	236
35		#7	14'2 7, 75' S	170*37.			Ti-	11	5		174
50		#8	14-23.51'5	170*337			60	10		817	338
0805		#9	14*23.491 S	170*37-8				"		8.8	180
2.0 35		# 10	14*24,55'S	170*37.0	M, M					8.7	602
<u> 3</u> 5		# 11	14*23,64'5	170*37.8	56, M			29-67		8.4	188
50		# 12	14"24.95'S	170 3 7	31' W			11	10		032
0905			14-23:[8'8	170*3 7.	SO W		70	11		8.7	205_
35		# 14		170*37.			('	93.63		8.9	019
35		# 15	14°2 S	170*3	W					·	
		# 16	14*2 S	170*3	W						
		# 17	14*2 S	170*3	W				15		
		# 18	14*2 S	170*3	W						
		# 19	14*2 S	170*3	W						
		# 20	14*2 S	170*3	W						
			14*2 S	170*3	W						
			14*2 S	170*3	W				20		
			14*2 S	170*3	W						
0930	Finish Discharge	#15		170-37.6	<u>,3</u> ′w	East-10	70%	27.68	SE to SW: 1.5	9.1	340
0935	Exit Discharge Zone	种儿	14.22, 62, S	170 3 7.	8(' W	ì		(1	iq e	9.3	336
1030	Secure SK Dock		14°16.50' S	170*41.2	W						
Current Dire	ction: At Center W	201	End	of Discha	irge <u></u>	est	Disc	narge Pattern	Ellipse		
Total Discharge Time: 175 mins. Average Speed During Discharge: 8.7 kts. Total Time Run 5./ hr.											
Navigational Plot made: Yald Presence of Plume? Navigational Plot made: Yald Presence of Plume?											
Time and po	Time and position of any floating material: Nonz Discharge Rate: 104 Gallons/min/kt.										
Unusua: Occ	Unusua: Occurrences? None										
	made: A.S.P.A.		U.S.C.G.M.S	D. V			Master: F/V	Blue Moon	14 10	West &	

Date:	08/26/11 Fri.		F/V	' Blue Moo	n Od	cean	Dumping	Log	Voya	age#	: 5467	
Time				Permit # OD 93	3-01 &	OD 93-0	02	•				
8/25 1715	Begin 1st Loading SK						Volume Load	ded: SK	78	1,500	0	Gallons
2/45	Finish 1st Loading SK			Trip # 1 - X				Othe		Ò		Gallons
2/21 0100	Begin 2 rd Loading SK			Trip#2				Tota	18.	7,500	5	Gallons
8/46 0400	Finish 2 rd Loading SK											
,		WP#	GPS Posit		Wind		% Clouds	Barometer	Swell		Speed	Course
062				170* 41.2' W		-20	90	27,66		Metric	kts	
072	3 Arrive Edge of Zone	# 1		170*38.55°W		32	1)	27,68		3.0	20	152
0735	Arrive Zone Center	#2		170*38.3 W	16	1)	de .	27.67	4	A	7.7	
0745	Begin Discharge	#3		170"37.21'W	11	4	ч	Ч	64	" X	7.5	115
0800		#4	14*25.21' S	170*37.63 W	61	11	85	J.C	56-	7.5+	7.2	094
	Remarks:	#5	14*2 4, (3' S	170°3 8. 21'W	11	{1	ч	न	"(11	8.6	3/8
" (5 " 30		#6		170*37.75' W	н	İt	t)	1.	2	11	8.7	263
43		# 7	14.25.16 S	170*37.59′W	1.	τ,		11	ş1	'' 5	1 /	115
0900		#8		170-37.78W	JE-			ţ/		(,	715	101
" 15		# 9	14-2 4.63' S	170*37.88°W	, k	**	70%	f i	4	۲)	9.2	257
" 30		# 10		170*37,69' W	ų	•1	100	u	11	<u> </u>	9.0	300
11 45		# 11	14*24,55'S 14*24,89'S	170*3 7. /9' W	"	ŧ1		29.70	1/	41	7.0	245
1000		# 12	14.54.87.8	170*37.jz~W	15E-	30	.,	11 15	ίt	11 10	8.0 8.2	321
9 15			14*24. 33 S	170°37, 27'W	12	•,,	100-KeIN	fl	- 11	ii.	8.0	715
6 30				170*3 8.62 W	11	J	100	29.69			8.2	1/2
" 45		# 15	14*2 S	170*3 W								
			14*2 S	170*3 W								
			14*2 S	170*3 W						15		
				170*3 W								
		# 19		170*3 W								
		# 20		170*3 W					1			
				170*3 W								
				170*3 W						20		
				170*3 W								
1045	Finish Discharge	#15	14-24.00' S	170'3 8.15' W	SE-	30	5001	23.69	55	- 3.5	9.3	337
1053	Exit Discharge Zone	#16	14.22.64 s	170'38.54 W	21	11	11	11	14	,	9.4	337
1/45	Secure SK Dock		14*16.50' S	170*41.2' W								
4-1-4-	irection: At Center A	W	Fnd	of Discharge A	111		Disch	arne Pattern	Figu	IRE V	7	
Outtent	Current Direction: At Center NW End of Discharge NW Discharge Pattern Figure 8											
	Total Discharge Time: 180 mins. Average Speed During Discharge; 8-34 kts. Total Time Run 5-33 hr.											
Navigation	Navigational Plot made: V 2 Presence of Plume? No											
	Time and position of any floating material: None Discharge Rate: 25 Gallons/min/kt.											
	Unusual Occurrences? None											
			NOCONO.	~ /			A 5	Dive No	M	141	1 May 1	
Notificatio	ns made: A,S,P.A	V	_ U.S.C.G.M.S.	.D,_V			Master: F/V €	Blue Moon	1	1/6	<u> </u>	

		08/30/11 Tues.		1			on Ocea		ımpin	g Log	Vo	yage	#: 5468		
(-	Time	7 411 1: 014			Pe	irmit # OD 9.	3-01 & OD 93		L	ded: SK		15 75	^	Gallons	
8/27	1600	Begin 1 st Loading SK			.	<i>"</i>		VO	lume Load			8,75	Q	Gallons	
	2195	Finish 1" Loading SK				#1-X				Other				Gallons	
8/30	0000	Begin 2 rd Loading SK			Trip	# 2				Total	100	1,750		Joanons	
0100	0200	Finish 2 ^{r3} Loading SK	WP#	GPS Po	eition		Wind	% Clo	ude	Barometer	Swell		Speed	Course	
	0535	Depart Starkist	VVIII	14*16.50'		* 41.2' W		100		29.59	7	Metric	kts		True*
	0633	Arrive Edge of Zone	# 1	14*22. \$8 1				1	1	01101	SE.	- 3,0+	7.7		
	0645	Arrive Zone Center	# 2		S 170		11 11	1	1	LE	1	11	7.9	160	
	0655	Begin Discharge	# 3	14-24.46 5			et it			14	at	чχ	7.7	115	
	0710		# 4	14-25.07	170	*38. KE'W	0 0			11	19	6.4	7,5	113	
	25	Remarks:	#5	14*24.30 8	170	*38,27' W	il 14	Issa-	Rain	29,60	IN.	1/	8.6	347	
	40		#6	14-24,66' 5	170	*37.63'W	SE-15	9	5	1	11	U	9.2	252	_
	55		#7	14*25,09 5	170	*37.76′ W	0 11	(l	18		5	3,5	338	
	0810		#8	14 24. 28 - 8	3 170	*37.73'W	SE-18	90	>	71			7.9	338	
	25		#9	14-24.691 5	3 170	137.96' W	11	1		29.61			9.3	1249	
	UB		# 10	14*25.11 3	170	*37.55 'W	55-20	8	Ö				9,0	715	
	55 09/0 25 40			14*24,(7/5	170	*3 7.43 W	· · ·		1				2.3	337	2
	0910			14*24.88	3 170	*38.50W	ч	7	٥			10	8.0	1094	
	2.5		# 13	14-24,43-5	170	1,3 g 41, M	SE-21	. {•					9.1	327	
	40		# 14	14-24, 62'8	3 170	137.50'W	11	66	O)			9.2	259	<u></u>
	55				170										
				14*2											
			# 17		170		<u> </u>					15			
				+	170										
					3 170										
			# 20		3 170										
					3 170										
					170							20)		
					3 170				- -	<u> </u>					
	0955	Finish Discharge	#(5	14.24.50'	\$ 170	*37.88 W	SE-TT		5 C	29.61	SE-	-34	9.0	338	
	1010	Exit Discharge Zone	#16	14-22.55 '			I is the		(1	.1	-1	ն	9.1	330	· •
	1105	Secure SK Dock		14*16.50'	S 170	*41.2' W									
	Current Dire	ection: At Center N	W	E	nd of [Discharge /	VW_		Disch	arge Pattern	Fig	ure)	¥		
	Total Discha	arge Time: 180n	nins. /	Average Spee	d Durii	ng Discharg	e: <u> ४・ </u>	kts.	Total Ti	me Run 5 ·	5 0	_hr.			
	Current Direction: At Center NW End of Discharge NW Discharge Pattern Figure S Total Discharge Time: 180 mins. Average Speed During Discharge: 8.6 kts. Total Time Run 5.5 hr. Navigational Plot made: Ver Presence of Plume? No														
	Time and position of any floating material: // Discharge Rate: 10 Gallons/min/kt.														
	Unusua, Oc	courrences? None										10	()		
	Notifications	s made: A S P A	1	USCGM	SD	V		Mast	er: FN	Blue Moon	"W	1.1/	1301		



$N \blacktriangle$	170 40.23 W	170 36.82 W	170 33.41 W	
			05 August, 2014 - Fri. Voyage # 5460 Starkist Cargo, Trip #1 M. Craok, Master FM Blue Moon	
1422.73 \$	Disposal Zone Cente 14*24.0' S x 170*36		THE @ 5-12 kts.	
14 26.14 S				

.

N \blacktriangle	170-40.23 W		170 36.82 W	170 33,41 W	
		18	10 August, 2011 - Weds Voyage # 5461 Starkist Cargo, Trip #1 M. Crook, Mester F.V. Effue Moon		
422.73 S	D's	posel Zone Center 24 0' S x 170" 38.3 W	Wind: East @ 10 - 2	20 lds:	
126.14S					

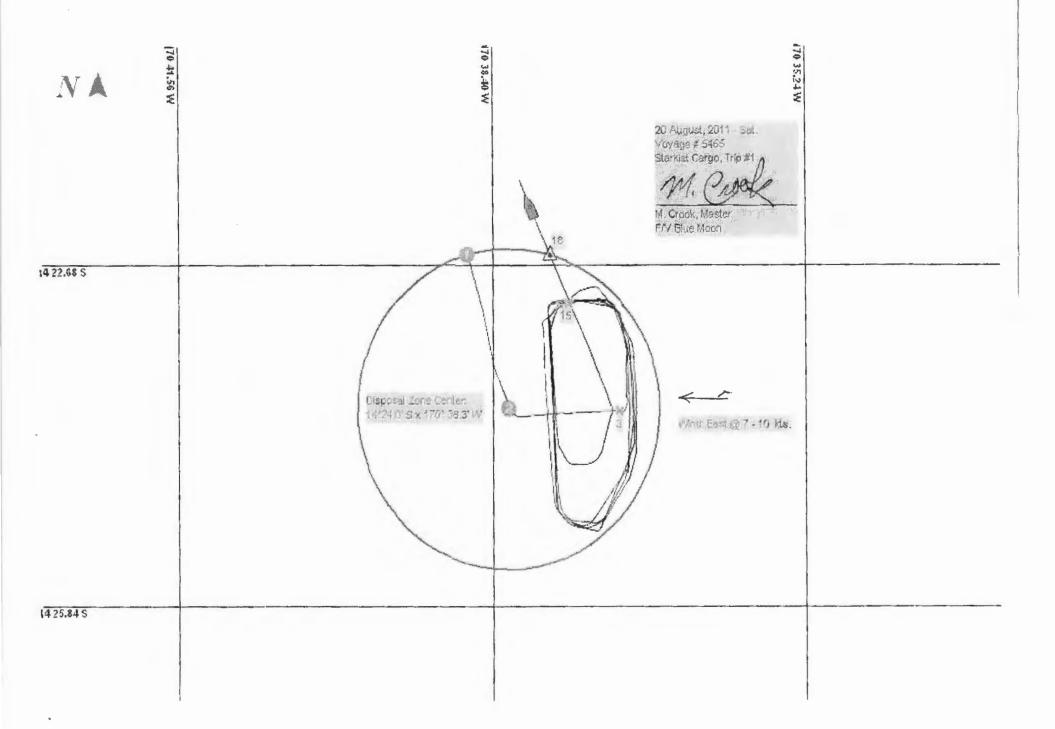
•

N \blacktriangle	70 39.90 W	W 90.7E 97	M 01 TE 01.
4 21,30 \$			12 August, 2011 - Fri. royage # 5462
	15.4		Starkist Cergo, Trip #1 Docean Monitoring Conducted Waypoint *C Lodicates Control Station sampling position W. Crook, Master FAY Blue Moon
42420 S	Disposal Zone Center: 14°24 û Six 170° 98.5°V		What East @ 7 - 15 kls
42420 S		14	

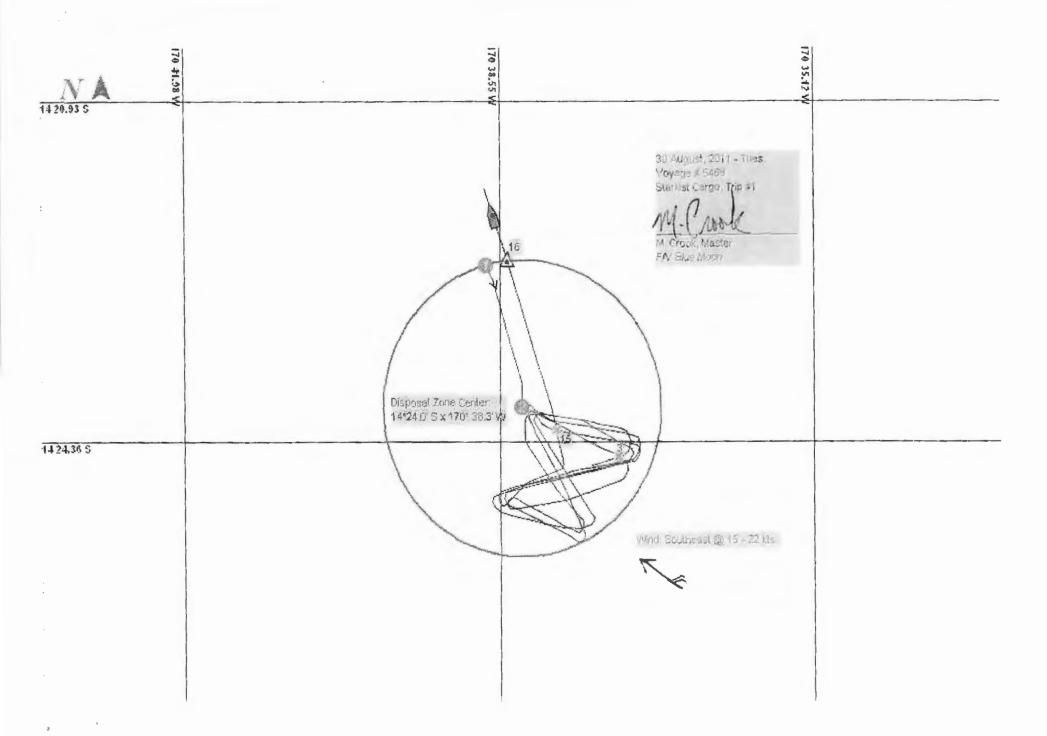
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$N \blacktriangle$	170 39.90 W	170 37.00 W	170 3-1-10 W	and other property of the second
4 21.30 S			15 August, 2011 - Tues Voyage # 5463 Steridst Cargo, Trip #1 M. Crook, Mester F/Y Blue Mooti	A STATE OF THE STA
	Disposal Zone Center 14*24 0' S x 170* 35.3*\	14 Mortheast @ 10	J Kts.	
42420 S				

N A	176 39.90 W	170 37.00 W	170 34:10 W
421.30 S		m	# 5484 Cargo, Trip #1 Cargo, Trip #1 K. Mester
	Disposal Zone Center 14*24.0 S x 170* 38.3* W	Mnd. Northeast @ 7 - 10 kts.	
12420 5			



$N \blacktriangle$	70 -10.23 W		70 36 07 111	70 33.41 W
¥22.73 \$		16	26 August, 2011 - Fri Voyage # 5467 Starkist Cargo, Trip #1 M. Cull M. Crook, Master F/V Blue Moon	
422.13 \$		Disposal Zone Center		
# 26.14 S		Win	Southeast @ 25 30 kts	All College of Commercial Association of Com
				magnin visida sidda maddissidd do Helle Helle Com Holo, man



OCEAN DUMPING MONTHLY SUMMARY

F/V BLUE MOON	September, 2011						
NUMBER OF TRIPS:	Starkist 13	Other 0	Joint 0	TOTAL:			
GALLONS-FOR THE MONTH:	Starkist 2,249,750	Other 0	Joint 0	TOTAL: 2,249,750			
GALLONS FOR SOLO TRIPS:	Starkist 2,249,750	Other 0	_				
RUNNING TIME ON TRIPS:	69.7 hours						
DISCHARGE TIME ON TRIPS:	39.83 hrs.						
AV. GPM DISCHARGE RATE:	109.6 gal/min/kt						
AV. TRIP TIME:	5.36 hrs.						
AV. PERCENTAGE OF VESSEL	USED BY EACH CA	NNERY - BY	GALLONAGE:				
Starkist Other							

MASTER:

100.00%

0.00%

M. Crook

	Date:	09/01/11 Thurs.		F	V Blue Mo	oon Ocea 3-01 & OD 93-0	•	g Log	Voyage	#: 5469	
7/3/	19761	১০০ ১০০ Begin 1 st Loading SK			r chine# OB o	J-0, Q OB 00 0	Volume Load	ded: SK	189,500)	Gallons
(2)	2/50	Finish 1st Loading SK			T'rip # 1 - X			Other	0'		Gallons
	0020	Begin 2 nd Loading SK			Trip # 2			Total	189,500		Gallons
1/1	4/370	Finish 2 nd Loading SK				-			101/000		,
'/'	014	, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	WP#	GPS Positi	ion	Wind	% Clouds	Barometer	Swell	Speed	Course
	0520	Depart Starkist		14*16.50' S	170* 41.2' W	East-7	25	24.65	Metric	kts	True*
	0612	Arrive Edge of Zone	# 1	14*22. 5(S	170*38.64 W	NE-10	30	29.66	East-1,5	P.6	165
	0622		#2	14*24.0 S	170*38.3 W	પ લ	40	ч	4)))	8.8	164
	0645	Begin Discharge	#3	14*2 3 (5 6 S	170*3 7.38 W	£1 ec	30	29.67	u h X	7.6	059
	0700			14*2 7, 3('S	170*37-77'W	4 1	E!	29.68	') j	7.8	135
	" 15	Remarks: () cann	# 5	14*2 3,73 CS	170*36 72 W	NE-12-	89	h		8.4	326
	" 30	Monitoring	#6	14*2'3,38's	170*3 7,87 ′W	+l (\)	11	ч		8.3	135
	" 45	Control Samoles	#7	14*2 3.77'S	170*36.87'W	in the	36	4	5	8.5	140
	0800	degum at 0695ha	# 8	14*2 3.28 1S	170*3 7.99 W	H	1	EA)		8.6	140
	15	14°23.43'Sx	#9	14*23,90' S	170*36.88 W	El E,		*1		8.8	335
	30	170°37.40° W	# 10		170*38.02'W	(1 t)		15		8.6	136
	45		# 11		170*36 A X W	NE-15				8.9	337
	0900		# 12	14*23,07' S	170*38,14' W	7	50		/ / 10	8.7	130
	1 15 11 30		# 13	14*2'3'6'S	170*3 6.85 W 170*3 8 7 W		4.			9.0	316
	11 30		# 14	14*22.75'S	170*38, 27 W	1 (+	60	<u> </u>		8.8	142
	1. 45		# 15	14*23.76'S	170*36.92' W		11	29:69		8.8	351
	1000		# 16	14*2 S	170*3 W	1					
	1		# 17	14*2 S	170*3 W				15		
			# 18	14*2 S	170*3 W						
			# 19	14*2 S	170*3 W						
			# 20	14*2 S	170*3 W						
				14*2 S	170*3 W						
				14*2 S	170*3 W				20		
					170*3 W						
	1000	Finish Discharge	#16	14*22.9(' S	170*3 7.47' W	NE-15	60%	29.69	East-1-5	8.4	/3/
	1110	Exit Discharge Zone	#17		170*38.87'W		"	<1	4	9.2	337
	1200	Secure SK Dock		14*16.50' S	170*41.2' W						
	Current Di	rection: At Center Sou	How	e AT Fnd	of Discharge_	SW	Disch	arge Pattern_	Ellipse	,	
										-	
	i otal Disch	harge Time: <u>195</u> m			. 1	e:0.3.4	_kts. Total Ti	me Kun o . k	nr.		
	Navigation	al Plot made: 121	Pres	ence of Plume?	No						
		position of any floating n		,		Discharge	Rate: 113	Gallons/m	in/kt.	Λ	
		ccurrences? None			/			-	11) []	
-		ns made: A.S.P.A.		_ U.S.C.G.M.S.	D	Applications and the second se	Master: F/V	Blue Moon	M.	Gold	

	Date:	09/03/11 sat.	F/V Blue Moon Ocean Dumping Log Voyage #: 5470										
	Time				Permit # OD 93				J	•			
114	1230	Begin 1st Loading SK						Volume Load	ded: SK	18:	5,00	3	Gallons
1/2	2-140	Finish 1 st Loading SK			Trip # 1 - X				Other	0	•		Gallons
	0200	Begin 2 nd Loading SK			Trip#2	-			Total	185	,000		Gallons
9/3	0330	Finish 2 nd Loading SK				-					,		
'1-			WP#	GPS Positi		Wind			Barometer	Swell		Speed	Course
	0530	Depart Starkist	ļ		170* 41.2' W	Eas		40	29.63		Metric	kts	True*
	06/3	Arrive Edge of Zone			170*38.64′W	Easi		' 11	11		1-1.0	8.6	164
	3622	Arrive Zone Center			170*38.3 W	N .	۲۱	1)	11	()	44	8.3	166
	0630	Begin Discharge			170*37.21 W	u	-,-	1,1	29.64	1.	ı, X	8.1	090
	45				170*37*77 W	1		14		1-7-	1	8.6	177
	0.700	Remarks:			170*37.13' W		_/	* 1	-8-			8.4	006
	15		#6		170*37.34'W			1,	21.65			8.7	358
	36			14*24, 51' S	170*3 7.80 W			"	η	1	5	8.9	169
	45				170*36.98' W	1		pt	E1			8.8	002
	0800				170*3 7.76′ W			50	h	1-		9.2-	180
	15		# 10		170*37.12' W	East.	12	11	٠,			8.7	017
	3-6		# 11		170*3 *7.79 * W	11	11	3.5	4	1		8.5	188
	0900		# 12		170*3 7.35 W	*1	u		rl		10		0/3
	0900		# 13		170*3 ~7.06 ′ W	10			11			9.1	357
	15		# 14		170*3 7.65′W	11	ц		d	1		9.6	179
	30		# 15		170*3 7 -04'W	Eas			ч			8,7	35/_
	45		# 16	14*23.891S	170*37-82 W	11	١/		29.66			9.4	176
	1000		# 17		170*36.9(W	l.	- 1	40	н		\ 15		005
	1015		# 18		170*3' 7,99 W			30	l ₁			9.5	192
	1030		# 19	14*24,16' S	170*36.95 W				29-65			8.7	004
			# 20		170*3 W							/	
					170*3 W								
					170*3 W						20		
					170*3 W								
	1045	Finish Discharge	#20	14*23,58's	170*36.97'W	East	- 10	30 %	29.65	For	-1.0	9-1	358
	1048	Exit Discharge Zone	#21	14*2 3. 22'S	170*3 7,00 W	4	44	15	ેલ	u	U	93	356
	1150	Secure SK Dock		14*16.50' S	170*41.2' W	,							
	Current Dire	ection: At Center W	21	End	of Discharge \(\lambda \)	est		Disch	arge Pattern_	EII	ince	/	
	Total Disab	755 m					8						
		arge Time: 255 m			/		, U	_kts. Total Tir	ne Run O	<u>)</u>	nr.		
	Navigationa	l Plot made: <u>Y ♀↓</u>	Pres	ence of Plume?_	N o			(70 1)	•				
	Time and po	osition of any floating n	nateria	1: None		Disc	charge	Rate: 62. 4	Gallons/m	in/kt.	Ω	Λ	
	Unusual Oc	currences? CIENN IN	SIB	Ack Flushing	Sthol #17	10/15.				א ראב	111	0//	
		s made: A.S.P.A.		U.S.C.G.M.S.	, ,	/ 1		Master: F/V B	Riue Moon		1.1/	2001	
	Notifications	. made. A.J.F.A	V	_ U.U.U.U.U.IVI.U.I	J			IVIASICI. F/V	JIUG IVIUUII	1-1			

Date: (09/07/11 Weels.													
Time				Permit # 0	DD 93	3-01 &	OD 93-0	2						
1830	Begin 1 st Loading SK							Volume Loa	ded: SK	122,5	० ०	Gallons		
2145	Finish 1st Loading SK			Trip # 1 - X					Other	0.		Gallons		
0200	Begin 2 nd Loading SK			Trip#2					Total	12215	00)	Gallons		
0415	Finish 2 nd Loading SK					-								
		WP#	GPS Posit			Wind		% Clouds	Barometer	Swell	Speed	Course		
0525	Depart Starkist	ļ		170* 41.2'	W	Eca	7-10	60	29.62	Metric	kts	True*		
0618	Arrive Edge of Zone	# 1		170*38.68		13	L1	ч	29,63	St. E. 2.5	8.5	/6/		
0638	Arrive Zone Center	# 2	14*24.0 S	170*38.3	W	21	L1	65	29.64	ч и	8.3	164		
0638 53	Begin Discharge	# 3	14*24.05 S	170*37.21		11	١.	70	29.65	L U X		096		
53		# 4	14*2 3.55°S	170*37.09		1	\rightarrow	и	64	1 1	8.2	177		
0708	Remarks:	# 5	14*2 4,8415	170*37.18		 		60	4	 	18,2	014		
23		# 6	14*23.34'S	170*37.07				2 ¹	29.66		8.6	321		
0708 23 38 53		# 7	14*24.59' S	170*37.76	W	-			11	 	8.6	180		
53		# 8	14*23,91' S	170*3691	, M	1		1€	11	+	8.8	358		
0808		# 9	14*22,90'S	170*37.76		 		(1	29.67	1-	8.7	186		
" 33 " 38		# 10	14*2 4.8 6 S	170*37,19		1		50	29.68		8.5	639		
" 38		# 11	14*23,0418	170*37.2		East		40	ч	Sto East - 20	71)	3 % 5		
" 53		# 12	14*24.82'S	170*37.2	· W	11	11	h.	11	4 11 1		041		
0908		# 13	14*23,47' S	170*37.06		41		50	1 1	(.	7.1	342		
" 53 0908 " 53 " 38		# 14	14*2 S	170*3	W									
" 3%			14*2 S	170*3	W	ļ								
			14*2 S	170*3	W	 								
			14*2 S	170*3	W					1:	7			
		# 18	14*2 S	170*3	W									
		# 19	14*2 S	170*3	W	<u> </u>								
		# 20	14*2 S	170*3	W	 		-	-					
		-	14*2 S	170*3	W	 				 				
		_	14*2 S	170*3	W					2	1			
00.5		4	14*2 S	170*3	W		- 13		30.73			077		
0915	Finish Discharge	#14		170*37.75	2, M	Eas	-12	50 %	29.68	Sto East-2.		273		
0920	Exit Discharge Zone	# 15	14+22.56' S	170*38,21	. W	1,	11	60%	u	at tr	9.3	338		
1015	Secure SK Dock		14*16.50' S		W	1		<u> </u>			<u> </u>			
Current Dire	ction: At Center <u>W</u>	25	End	of Dischar	ge <u>()</u>	101		Discl	narge Pattern_	Ellipse				
			Average Speed I	During Disc	harge	: <u> 8 </u> :	56	kts. Total T	ime Run #	} hr.				
Navigational	Plot made: V &	Pres	sence of Plume?	NO				•						
-	sition of any floating		. /			Die	scharge	Rate: 91	Gallons/m	nin/kt				
,	currences? Now		11. 1000			Dis	Scharge	rate	Canons/II		1			
									DI 14	JAA () AN	ماله			
Notifications	made: A.S.P.A.		_ U.S.C.G.M.S	.D. <u>//</u>			Ф	Master: F/V	Blue Moon	To la Co				

1/6

Date:	09/09/11 Fri.		F/V Blue Moon Ocean Dumping Log Voyage #: 5472											
Time				Permit # OD 9		•								
1425	Begin 1 st Loading SK					Volum	e Loaded: SK	191.75	0	Gallons				
2145	Finish 1 st Loading SK			Trip # 1 - X			Other	0'		Gallons				
0130	Begin 2 nd Loading SK			Trip # 2			Total	191,750	5	Gallons				
0300	Finish 2 nd Loading SK									_				
		WP#	GPS Pos		Wind ,	% Clouds	Barometer	Swell	Speed	Course				
0525	Depart Starkist			3 170* 41.2' V	V Calm	25	29.64	Metric	kts	True*				
0617	Arrive Edge of Zone	# 1	14*22. 51' S	170*38. 64' V	V Foot-1	30	29.66	E+5-1.5	815	164				
0628	Arrive Zone Center	# 2	14*24.0 S			30	1 11	ey {(8.2	156				
0637	Begin Discharge	#3	14*2 4, 07 S	170*37.22 W			и	" " X	8.2	096				
'' 52		# 4	14*2 3.7 2′ S	170*37.64' W	/ 4 3'	-1	u	-1 11	8.5	178				
0707	Remarks:	# 5	14*24.60'S	170*3 7.00 W		30	29.67	1 1	8.1	0(2				
1 22		# 6	14*23,13' S	170*37-71 W		tı .	11		8.6	180				
" 37		#7	14*2 4.95 S	170*3 7.76 W		11	11	/ 5		197				
" 52		#8	14*23,52'S	170*3696 N		r.f	27.68		8.5	323				
0807		# 9	14*23.83/S	170*37.78W		-			9.0	181				
1 22		# 10	14*24-74' S	170*37,14' W					8,4	032				
37		# 11	14*22,9815	170*3 *7 .44′ W					8.8	274				
" 52		# 12	14*24.74' S	170*37.78 W		30	27.69	10		181				
0907		# 13	14*23 71' S	170*36.97' W			0 1		8.8	346				
1 22		# 14	14*2 4.01' S	170*37.68 W		15	(1		9,4	179				
" 37		# 15	14*2 S	170*3 V										
		# 16	14*2 S	170*3 V										
		# 17	14*2 S	170*3 V				15	<u> </u>					
		# 18	14*2 S	170*3 V										
		# 19	14*2 S	170*3 V										
		# 20	14*2 S	170*3 V										
			14*2 S	170*3 V										
			14*2 S	170*3 V				20)					
		-	14*2 S	170*3 V										
0937	Finish Discharge	#15		S 170+3 7, 20'		2 10	2 27.69	E65-1.5	9.1	345				
0946	Exit Discharge Zone	#16		S 170*3 7.46	W	ri et	111	tt a	9,3	330				
1035	Secure SK Dock			170*41.2' W						1				
Current Dir	ection: At Center (1)	est	En	d of Discharge	West	-	Discharge Pattern	Ellipse						
Total Disch	arge Time: 180 n	nins.		During Dischar	1 🕜 ""	•	tal Time Run	. /						
	al Plot made:			. /										
					Discha	ae Rate: ا`	レレ Gallons/i	min/kt.	1					
Time and position of any floating material: Nove Discharge Rate: 12 Gallons/min/kt. Unusual Occurrences? Nove														
	s made: A.S.P.A		_ U.S.C.G.M.S	s.D. <u>V</u>	-	Master:	F/V Blue Moon	17.	work					

	Date: (09/11/11 Sun.	F/V Blue Moon Ocean Dumping Log Voyage #: 54/3											
	Time		Permit # OD 93-01 & OD 93-02											
31,	1600	Begin 1 st Loading SK							Volume Lo	aded: SK	18	1.750)	Galions
7/10	2145	Finish 1 st Loading SK				Trip # 1 - X				Other	0	,		Gallons
)	0200	Begin 2 nd Loading SK				Trip#2				Total	18	1,750)	Gallons
91 <i>u</i>	0400	Finish 2nd Loading SK									404	1		- .
. /			WP#	GPS	Positi	ion	Wind		% Clouds	Barometer	Swell		Speed	Course
	0.520	Depart Starkist		14*16.50'	S	170* 41.2' W	Eas	-10	30	29,60		Metric	kts	
	0613	Arrive Edge of Zone	# 1	14*22.54°	S	170*38.65 W	East	-12	El	29,62	Eas	1-1.5	8.6	162
	0623	Arrive Zone Center	#2	14*24.0	S	170*38.3 W		u	11	ч	At	, 11	804	160
	0632	Begin Discharge	#3	14*24.13	S	170*37,2 W	6,	(1	+t	29,63		_ X	8.3	090
	0647		#4	14*23.62	(S	170*3 7,79' W			40		__		8.7	178
	0762	Remarks:	# 5	14*24.72	'S	170*37.10" W			-1	-\			8:2	019
	14 17		#6	14*23 21	'S	170*37.07' W			60				8.8	356
	4 32		#7	14*2 4,48		170*3°7. 83' W			70 80			5	8.7	175
	47		# 8	14*2 4, 23'	S	170*3 7. ፊ ዣ W							847	000
	0802		# 9	14*2 3.16	'S	170*37. 76 ′W			·!				8.8	180
	u 17		# 10	14*2 4.65	S'S	170*37, 24' W			Kain				8.6	011
	" 32		# 11	14*2 3.49	'S	170*37.03 W		3-15	80	29:64			8.9	358
	" 47		# 12	14*24,74	/S	170*37.86 W		11	"	r)		10	9.2	174
	0902		# 13	14*23.73	'S	170*3698' W	t's	31	70	11			9.0	603
	117		# 14	14*23.38	'S	170*37.83°W	11	ч	45	e,			9.1	181
	" 32		# 15	14*24.87	'S	170*37.32 W	W	i)	80	1(8.5	036
			# 16	14*2	S	170*3 W								
			# 17	14*2	S	170*3 W						15		
			# 18	14*2	S	170*3 W								
			# 19	14*2	S	170*3 W								
			# 20	14*2	S	170*3 W								
				14*2	S	170*3 W								
				14*2	S	170*3 W						20		
				14*2		170*3 W								
	0947	Finish Discharge	# 16	14*23.64	s	170*37. 23' v	V East	15	80%	29.65	Eas	t-1.5	9.1	334
	0949	Exit Discharge Zone				170*3 7. 32' V		ι(11	· u	84	u	9-2	336
	1045	Secure SK Dock		14*16.50'	S	170*41.2' W								
		ction: At Center 💯 🤉	M		End	of Discharge <u></u>	Vest		Disc	harge Pattern_	Elli	050		
	Tal IDia	195	-				(7				T		
		arge Time: 195 m					je:	4:1	kts. otal	ime Kun 2,	<u> </u>	_nr.		
	Navigational	l Plot made: √ 	Pres	ence of Plu	me?	No				-				
	-	sition of any floating r		k /			Dis	scharge	e Rate: /O	Gallons/m	in/kt.			
	•	currences? ฟลาง				/						\wedge	0	
			7	U.S.C.G.	MC	D I			Master: EA	/ Blue Moon	M	(1 200	1/	
	ivotifications	made: A.S.P.A <i>V</i>		_ 0.5.0.6.	IVI.3.	.D. <u>V</u>			Master. F/V	DIUE MOON	-	/	N.	

	Date:	09/13/11 Tues.			F/	V Blue	Mo	on O	cear	Dumpin	g Log	Voy	age	#: 5474	
	Time					Permit #				-					
112		Begin 1 st Loading SK								Volume Loa	ided: SK	137	7,500	>	Gallons
1/13	0210	Finish 1 st Loading SK				Trip # 1 - X	ζ.				Other	0			Gallons
uc o	0210	Begin 2 nd Loading SK				Trip#2		-			Total	137	500		Gallons
V	0910	Finish 2nd Loading SK						-							-
•			WP#		S Posit			Wind		% Clouds	Barometer	Swell		Speed	Course
	0925	Depart Starkist		14*16.50		170* 41.2	' W	East	-12	30	27.68		Metric	kts	True*
	1018	Arrive Edge of Zone	# 1	14*22.5		170*38.6	C, M	34	11	25	A	E+58		8.5	160
	1028	Arrive Zone Center	#2	14*24.0		170*38.3	W	H	- Al	ನಿಂ	29.69	u	и и	8:4	157 090 181
	1037	Begin Discharge	#3	14*24.0	('S	170*37.	JI,M	b).	n	11	ч '	11	чХ	8,3	030
	52		#4	14*23.3	<u>5′s</u>	170*37.8				+1	71	1	7	8.6	181
	1107	Remarks:	# 5	14*24.91	s'S	170*3 7.4		//		,11	29-68	1		8.5	039
	" 22		#6	14*22.9	7'S	170*37.			1	25	lı .		1	2.0	320
	* 37		#7	14*2 4.5	OS	170*3 7-7	74'W	17	1	\	29.67		5		178
	" 52		# 8	14*2 4.6	XI'S	170*36.3 170*3 7. 9	8.M				29-66	1-1-	\rightarrow	8.9	357
	1207		#9	14*23.0	818	170*37.9	3'W				29.65	1		8.7	184
	M 22	,	# 10	14*2 5.0	G S	170*37.5	4' W	` .				$\perp \perp$		8.5	088
	" 37		# 11	14*23 ?	3'S	170*36.9	9 W	East	-(0	,(89.64			9,4	326
	" 52		# 12	14*23,9	<u>7's</u>	170*37.8		V	el .	30	u	1-(-	\ 10	910	181
	1307		# 13			170*37.1		1.	τ	t.	29.63	\ \ <u>\</u>		9.5	337
			# 14	14*2	S	170*3	W								
				14*2		170*3	W					1			
			# 16			170*3	W								
			# 17			170*3	W						15		
			# 18	14*2	S	170*3	W	<u> </u>							
			# 19	14*2	S	170*3	W								
			# 20		S	170*3	W								
				14*2	S	170*3	W								
				14*2	S	170*3	W						20		
				14*2	S	170*3	W	-							
	1316	Finish Discharge	414	14+22.8	6 s	170*37.3	2, M	East	-10	208	27.63	ELSE	-1.0	9.6	298
	1311	Exit Discharge Zone	*15	14+22.	71' s	170*3 7.	56' W					EL,	٤,	9,3	320
	1410	Secure SK Dock		14*16.50'		170*41.2'									
	Current Dir	ection: At Center W	25		End	of Discha	rge ()	lest		Discl	harge Pattern_	Elli	ose		
	Total Disch	narge Time: 153 m	ine	Average S	need I	During Die	charae	. 8	9		ime Run_ 7-	_	hr.		
							oriarge	·	`	_kts. Total I	mic ran_ r				
	•	al Plot made: <u>۲</u>				_ <i>N</i> o				101					
	Time and p	oosition of any floating i	materia	al:_ <i>[\ordinates</i>]	MP_			Disc	harge	Rate: 0	Gallons/m			Λ	
	Unusual O	ccurrences? Non	2	•								11/	γ_{α}	11 -	
	*	s made: A.S.P.A.	/	USC	G.M.S	D. /				Master: F/V	Blue Moon	M.	2/LAN	1	

	Date:	09/15/11 Thurs.			F/V	Blue M	oon C)cea	n Dumpii	ng Log	Voy	age	#: 5475	,
	Time				P	ermit # OD 9	3-01 & C	D 93-0	02		_			
9/1/1	1700	Begin 1 st Loading SK							Volume Loa	aded: SK	175	,000	5	Gallons
9/14	0415	Finish 1st Loading SK			Tri	p#1-X				Other	0			Gallons
1115		Begin 2 nd Loading SK				p#2				Total	175	COO.		Gallons
		Finish 2nd Loading SK												
			WP#		Position		Wind,		% Clouds	Barometer	Swell		Speed	Course
	0525	Depart Starkist		14*16.50'		0* 41.2' W		Δ	70	29.58		/letric	kts	
	0616	Arrive Edge of Zone	# 1	14*22.5(0*38.70' W	LOST	-/0	(1	29:69	East	-1.5	8.5	162
	0635	Arrive Zone Center	#2	14*24.0	S 17			li	ч	- CI	1	7	8.4	168
	0635	Begin Discharge	#3	14*24.10'	S 17	0*37-22W	LI	ly	Li Li	t1		X	2,5	090
	50		# 4	14*2 3,89	S 17	0*37,90' W			11	C)		1	8.7	179
	0705	Remarks:	# 5	14*24,70		0*37.((' W	11	1 ^f	11	11			8,2	020
	20		# 6	14*2,2.98	S 17	0*37.41'W		N	4	11	1-1-		8.5	272
	35		#7	14*2 4, 60	S 17	0*3 7.85′ W	1	\rightarrow	80		 - - - - - - - - -	5	8,9 F.6	180
	SO		# 8	14*23.57	S 17	0*3 7.69' W	+		11	*,		1	2.5	346
	0705		# 9	14*23.28	S 17	0*3 7,91 W			1	1-		1	8.3	178
	30		# 10	14*24, 86		0*37.24 W	+			4		1	8.5	048
	35		# 11	14*23.05		0*37·78′ W	11-		 	**	1-1-	10	9-0	238
	30		# 12	14*24.80	S 17	0*3·7. 85 W	1/			21		10	£'3	177
	0905		# 13	14*24.22	S 17	0*37,04 W				٤١		\rightarrow	8.8	002
	20			14*24,91		0*37.88 ′ W							7.1	180
	35		# 15			0*3 W			-					
						0*3 W			<u> </u>			- 15		
			# 17			0*3 W				 		15	<u> </u>	
			# 18			0*3 W					<u> </u>			
				14*2		0*3 W								
			# 20			0*3 W							-	
			+	14*2		0*3 W					-			
			-	14*2		0*3 W						20		
	0000		11.	14*2		0*3 W	-		0	70 70	- 1	1 ==	8.5	
	0935	Finish Discharge	#15	14-23.44		0*37.12 W	East		80%	29.69	East-		9.2	321
	0943	Exit Discharge Zone	#16	14*22.8(S 17	0+37.46' W	/ 1/	ц	u	- "	и	11	9.3	3 29'
	1040	Secure SK Dock		14*16.50'		0*41.2' W	1							
	Current Dir	rection: At Center <u></u>	24		End of	Discharge $\underline{ extbf{V}}$	rest		Disc	harge Pattern_	Ellip.	<u>se</u>		
	Total Disch	narge Time: 180 m	ins. /	Average Spe	ed Dur	ing Discharg	e: 8 -	75	_kts. Total T	ime Run 5.	25 h	r.		
	Navigation	al Plot made: <u>Yes</u>	Pres	sence of Plui	me?_ <i>/</i>	0								
	Time and p	oosition of any floating r	nateria	al: None			Disc	charge	Rate:	Gallons/m	nin/kt.		Λ	
		ccurrences? None				/		J			0011	0	1/-	
	Notification	ns made: A.S.P.A	/	U.S.C.G.	M.S.D.	V			Master: F/V	Blue Moon	74.	1000	Me	

Time Permit # OD 93-01 & OD 93-02 9/16	l l	Date:	09/17/11 Sat.		F/	/V Blu	e Moo	n O	cean	Dumping	Log	Voyage #	f: 54/6	
Trip # 1 - X	-	Time				Perm	it # OD 93	3-01 & 0	OD 93-0)2				_
Trip # 1 - X	oith	1500	Begin 1 st Loading SK							Volume Loa	ded: SK	155.00	ಲ	Gallons
Begin 2nd Loading SK Finish 2nd Loading SK Finish 2nd Loading SK Finish 2nd Loading SK Finish 2nd Loading SK WP# GPS Position Wind % Clouds Barometer Swell Speed Course	1110		_			Trip#1	- X				Other			Gallons
Finish 2 nd Loading SK WP# GPS Position Wind % Clouds Barometer Swell Speed Course O 5 5	,							-			Total	155,00	0	Gallons
WP# GPS Position Wind % Clouds Barometer Swell Speed Course 05 5 Depart Starkist 14*16.50' \$ 170*41.2' W Co. W. Go 29.64' Metric kts True* 06 05 Arrive Edge of Zone # 1 14*22.58' \$ 170*38.8 66' W Fast 100' 27.66' SE-50.22' 8.5 16.5 06 05 Arrive Zone Center # 2 14*24.0 \$ 170*38.3' W	·	1						_						-
()605 Arrive Edge of Zone #1 14*22.58 S 170*38.66 W East-10 " 27.66 SE-5(w-2 8.5 /6/25 Arrive Zone Center #2 14*24.0 S 170*38.3 W " " 8.7 /63 OG 25 Begin Discharge #3 14*24.67 S 170*37.23 W " X 8.2 090 Feb #4 14*23.86 S 170*37.76 W " X 8.9 /80 E5 Remarks: #5 14*24.83 S 170*37.76 W " 8.9 /80 E5 Remarks: #5 14*24.83 S 170*37.72 W " 29.67 8.4 225				WP#	GPS Po	sition		Wind	1	% Clouds				
7605 Arrive Edge of Zone #1 14*22.58 S 170*38.66 W East-10 U 27.66 SE-50.72 8.5 [6] 0605 Arrive Zone Center #2 14*24.0 S 170*38.3 W W W W W W W W W W W W W W W W W W W	Γ	0515	Depart Starkist		14*16.50'	S 170* 4	1.2' W	Ca	/W		29.64			
66.25' Begin Discharge #3 14*24.0 \$ 170*37.33' W 66.25' Begin Discharge #3 14*24.67' \$ 170*37.33' W 40 #4 14*23.85'\$ 170*37.86' W ES Remarks: #5 14*24.83' \$ 170*37.36' W #6 14*27.67'\$ 170*37.32' W 29.67 8.4 225		0605	Arrive Edge of Zone					East	1-10		29,66			
40 #4 14*23.85'S 170*37.86'W 4 8.9 186 85 Remarks: #5 14*24.83'S 170*37.16'W 4 8.2 03/ 0710 #6 14*29.07'S 170*37.12'W 29.67 8.4 22.5		0615	Arrive Zone Center						3.1	Ч	in in			163
#4 14*23.85'S 170*37.86'W	(0625	Begin Discharge			170*37	7, 23' W				1	X	8.2	090
0710 #6 14*27.07'S 170*37.72'W 29.67 X.4 225		40				170*3*	7.80° W			11			18.9	180
0710 #6 14*27.07'S 170*37.72'W 29.67 X.4 225	[88	Remarks:		14*2 4 . 83' S	170*3	7.16'W			u	4		8.2	031
11 m 1 4 4 6 1 4 m 1 4 4 6 1 4 m 1 4 4 6 1 4 m 1 4 4 6 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4		0710		#6	14*2'9,07'S	170*3	7-72' W				29.67		8.4	225
28 #7 14*25.16'S 170*3755'W 70 5 8.7 137		28		#7	14*25/16 S	170*3	752,M			70			5 8.7	137. 358 180
40 #8 14*2 3.46'S 170*37. 20'W		40		#8	14*2 3.46'S	170*3	7.20°W						8.6	350
40 #8 14*2 3.446'S 170*37.20'W 8.6 350 55 #9 14*24.13'S 170*37.81'W East-12 9.0 180		55				170*3	7,81, M	Eas	1-12	1				180
0810 #10 14*2445 S 170*37-11'W " 175- Kain \ 8.6 009		0810							1,1	75 - Kain				004
		25						u	()					183
40 #12 14*24.74'S 170*37.32W 10 8.7 012		40								1	`	1		012
70 9.2 251					14*22,33'S	170*3	7.66 W						12.2	
6910 #14 14*23.85'S 170*37.75" \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ŀ	0910			14*23.85'S	170*3				15			8.9	346
# 15 14*2 S 170*3 W														
# 16 14*2 S 170*3 W	1							ļ						:
# 17 14*2 S 170*3 W 15	į											1	5	
# 18 14*2 S 170*3 W								ļ						
# 19 14*2 S 170*3 W	ļ													
# 20 14*2 S 170*3 W				# 20										
14*2 S 170*3 W														
14*2 S 170*3 W 20												2	0	
14*2 S 170*3 W								1	-		00/-		1	-
0915 Finish Discharge #15 1423,02's 17037.82' W EQUI-12 GO 29.67 5E-5W-20 8.9 354			Finish Discharge		14"23,02"	S 170*3	<u>7.82 w</u>	ECT	1-12		29.67	2E-2M-34		
0920 Exit Discharge Zone #16 14*22.59 S 170*37.95 W " " " " 9.0 342				#16	14*22.591	S 170*3	7.95° W	"	4	"	" /	u 11	9.0	342
/O 2O Secure SK Dock 14*16.50' S 170*41.2' W		1020			14*16.50'	S 170*41	.2' W	1 0						
Current Direction: At Center Wost End of Discharge Wast Discharge Pattern Ellipse		Current Dire	ection: At Center 🔱	ust	Er	nd of Disc	charge <u>\</u>	Jan		Disch	narge Patterr	Ellipse	,	
Total Discharge Time: 170 mins. Average Speed During Discharge: 8.7 kts. Total Time Run 5./ hr.				- 1	Average Spee	d During	Discharge	e:	8.7	_kts. Total Ti	ime Run_ ರ್	hr.		
Navigational Plot made: YRA Presence of Plume? No	`	Navigationa	al Plot made: YRA	Pres	ence of Plumo	e? <u>Vo</u>	-			. ~			_ 1	
Time and position of any floating material: Nove Discharge Rate: 105 Gallons/min/kt.		Time and p	osition of any floating r	nateria	al: Nona			_ Dis	scharge	Rate: 105	Gallons/	min/kt.) //	
Unusual Occurrences? Nova				/	-		/		•			0.11	100	
Notifications made: A.S.P.A. U.S.C.G.M.S.D. Master: F/V Blue Moon			•		U.S.C.G.M	.S.D/				Master: F/V	Blue Moon	*M.	LIME	

Date:	09/20/11 Tues.		F/	V Blue M	oon	Ocear	Dumpin	ig Log	Voyage	#: 5477	
Time				Permit # OD	93-01	& OD 93-0	2				
1815	Begin 1 st Loading SK						Volume Loa	ided: SK	138,70	50	Gallons
2145	Finish 1st Loading SK			T'rip # 1 - X				Other	0		Gallons
0100	Begin 2 nd Loading SK			Trip # 2				Total	1.38,75	70	Gallons
0425	Finish 2 nd Loading SK										
		WP#	GPS Posit			nd	% Clouds	Barometer	Swell	Speed	Course
0510	Depart Starkist					3/m	66	29,60	Metric		
0602		# 1				157-7	70	to	E+SE-1.0	8.7	161
0612	Arrive Zone Center	# 2			N i	u /	· (I	tı		8.6	162
0620	Begin Discharge	# 3		170*37.24 V	٧ ،))		x 8.3	690 178
35		# 4		170*37.75'V		ч		29.61	1 (8.4	178
50	Remarks:	# 5		170*36.99' V		1 1	`	N N		8.7	354
0705		#6		170*37,78 V			٠. ډ	11		8.5	180
20		#7		170*37,44° V			Go	11		5 8.6	031
35 50		# 8	14*2'3,27'S	170*37,05′ V	V		gl	e.	1)/	814	335
50		# 9	14*24.62'S	170*3 7. 69 V		1	50	29.62	1 (8.6	179
0805		# 10	14*23,96'5	170*37,641		1 /		**		7.0	ී
20		# 11	14*2 4. 34' S	170*3 >.73 V		<u> </u>		"		8.9	178
35 35 58		# 12	14*24.36 S	170*36.9811		w-10		"		10 8.8	001
58		# 13	14*23 . 33'S	170*3 7.7 3′ V				11		8.9	182
0905		# 14		170*37.56 V				27.63		9.1	333
20		# 15			V		`				
		# 16			V						
		# 17			V					15	
		# 18	14*2 S		V			·			
		# 19	14*2 S		V						
		# 20	14*2 S	170*3 V	٧						
			14*2 S		٧						
			14*2 S		٧					20	
			14*2 S	170*3 V	٧						
0915	Finish Discharge	#1S	14*23.19' S	170*37,87	WE	ast-10	ड०ह	29.63	E+5E-1.		338
0920	Exit Discharge Zone	#16			W		1	4.1	11 11	9.1	339
1010	Secure SK Dock			170*41.2' W							
Current Dir	rection: At Center	est	End	of Discharge	We.	12	Disc	harge Pattern	Elling	2 _	
Total Disch	narge Time: 175 n	nins.						ime Run <u></u> حَرَّ	/		
	al Plot made: <u>√Չ໓</u>		sence of Plume?	. /							
	oosition of any floating		. (Discharge	Rate: 9	Gallons/n	nin/kt.	~ 1	
-	ccurrences? <u> ೫೪೪೪</u>								2016	100/	
Notification	ns made: A.S.P.A		_ U.S.C.G.M.S.	.D			Master: F/V	Blue Moon	101.	SUOCE	

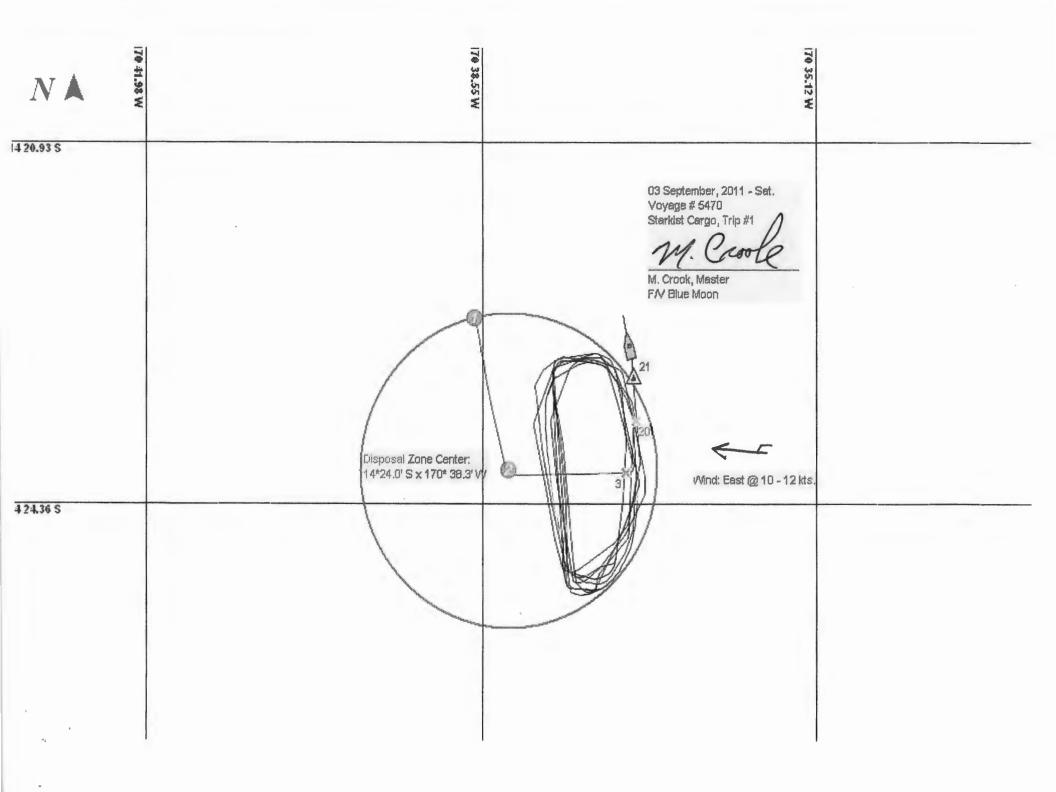
	Date:	09/22/11 Thurs.		F	N Blue Mo	on Ocear	n Dumpin	ıg Log	Voyage	#: 5478	
	Time				Permit # OD 93	3-01 & OD 93-0	2				_
MOL	1325	Begin 1 st Loading SK					Volume Load	ded: SK	191,250	>	Gallons
1/21	2145	Finish 1 st Loading SK			Trip # 1 - X			Other	0		Gallons
2/00	0110	Begin 2 nd Loading SK			Trip#2	-		Total	191,25	0	Gallons
122	0/50	Finish 2nd Loading SK				-					
·			WP#	GPS Positi			% Clouds	Barometer		Speed	Course
	0515	Depart Starkist			170* 41.2' W	Calm	25	29.58	Metric	kts	True*
	0610	Arrive Edge of Zone	# 1		170*38. 54 W	NE-7	ıl	29.59	Edst-1.5	8.6	165
	0620	Arrive Zone Center	# 2		170*38.3 W	11 4	30	u	11 11	8.2	169_
	0628	Begin Discharge	#3		170*37.39' W	u u	N	ч	* u X	811	045
	43		# 4		170*3 7,67 W	11 11	41	29.60	ч ч	7.8	134
	58	Remarks:	# 5		170*37, (8' W	u u			1	8.4	321
	0713		#6	14*2'3, 25'S	170*38,62. W	-1 21				8,3	/35
	28		# 7	14*23.43° S	170*37.06'W	•) *(5	8.6	328 132
	43		#8	14*2 3,57'S	170*3'7,64'W	£1 1/				8,6	132
	58		# 9	14*23.07'S	170*37.28' W	NE-10				8.9	317
	0813		# 10	14*2'3,32'S	170*37.87' W	K W	25			8:7	136
	28		# 11	14*23,24'S	170*37.2(' W	CL 11	£1			8.9	318
	43		# 12	14*23.85' S	170*37-25'W	11 (4	ty	<u> </u>	10	8.6	134
	58		# 13	14*22.67'S	170*37.70 W	NE-12-	30			8.4 9.0	278
	0913		# 14	14*24.69'S	170*37.19'W		11	1		9:0	142
	28		# 15	14*2 S	170*3 W				,		
			# 16	14*2 S	170*3 W						
			# 17	14*2 S	170*3 W				15		
			# 18	14*2 S	170*3 W						
			# 19	14*2 S	170*3 W						
			# 20	14*2 S	170*3 W						
				14*2 S	170*3 W						
				14*2 S	170*3 W				20		
				14*2 S	170*3 W						
	0928	Finish Discharge	#15	14.2 2-71' S	170*3 7.85' W	NE-12	30	29.60	Enst-1.5	9.1	291
	0930	Exit Discharge Zone	#16	14*22,56' S	170*3 8. (1' W			n		8.7	3/9
	1025	Secure SK Dock	110		170*41.2' W						
	Current Dir	rection: At Center So	41	seed End	of Discharge	1/1/	Disch	arge Pottern	Ellipse		
		9							I		
	Total Disch	narge Time: <u>180 </u>	nins. /	Average Speed [During Discharge	e: 0.6	_kts. Total Ti	me Run_5.	hr.		
	Navigation	al Plot made: <u>√⊘</u>	Pres	sence of Plume?	No		,,,,	_			
		position of any floating	materia	al: None		Discharge	Rate: 123 .	☐ Gallons/m	in/kt.		
		ccurrences? None							MI().	1 -	
		is made: A.S.P.A	/	_ U.S.C.G.M.S.	.D. 🗸		Master: F/V	Blue Moon	M. NOO		

	Date:	09/24/11 Sat.		FΛ	/ Blue Moo	n Ocean	Dumping	Log	Voyage #	t: 5479	
	Time				Permit # OD 93	3-01 & OD 93-0	02				_
2	1800	Begin 1st Loading SK					Volume Loa	ded: SK	188,000		Gallons
3	2015	Finish 1st Loading SK			Trip # 1 - X			Other	0		Gallons
	0 200	Begin 2 nd Loading SK			Trip # 2	_		Total	188,000		Gallons
4		Finish 2 nd Loading SK				_					
			WP#	GPS Posit		Wind	% Clouds	Barometer	Swell	Speed	Course
	0520	Depart Starkist	1		170* 41.2' W	Calm	50	29.62	Metric	kts	True*
	0612	Arrive Edge of Zone	# 1		170*38. 66' W	43	40	29.63	Etos-1.0	8.5	164
	0624	Arrive Zone Center	#2		170*38.3 W	М	Ŋ	29,64	1 7 7	8.3	163
	0632	Begin Discharge	#3		170*37.24 W	1)	11	29.66	\ \ X	8.0	090
	" 47		# 4		170*3'7.61' W	a			$\perp - / - /$	8.2	180
	0702	Remarks:	# 5		170*36.87' W	NE-3	30		 	8-1	003
	" 17		#6		170*3 7.71' W	(1 1)	4\		+	8.0	218
	, 35		#7	14*24, 97'S	170*37, 64' W	NE-5	17	-0.45	1 7 5		136
	" 47		# 8		170*37.26 W	h (1	 	29-67	1-1-	8.8	314
	0805		# 9		170*37.73′W	NE-7		"		8.7	171
	17		# 10	14*24,12' S	170*36 .98' W	7 7	 	0000	 	8.6	349 (80
	32		# 11		170*37,\3'W	+++-		29-68	1 1 1	8.7	(80
	47		# 12		170*36.98 W	 	1	1.	10	8.9	006
	0902		# 13		170*3 7 ·76' W		32	29.69		817	179
	17		# 14		170*37.35' W	-	u u	n	1 1	8.5	045
	32				170*3 W						
					170*3 W				1		
					170*3 W				15	<u> </u>	
			# 18		170*3 W						
			# 19		170*3 W	<u> </u>					
			# 20		170*3 W						
			-		170*3 W		-				
					170*3 W				20	1	
	6077		4		170*3 W	415		20.70	FICIA	100	700
	0932	Finish Discharge	#15		170*3 7.32 W		35	29.69	EtoS-1.0	9.2	329
	0935	Exit Discharge Zone	416		170*3 7. 55' W	1 11	4	4	4 4	9.2	33,2
	1035	Secure SK Dock			170*41.2' W			L		<u> </u>	
	Current Dire	ction: At Center W	207	End	l of Discharge <u></u>	VSW	Disch	arge Pattern	Ellipse		
	Total Discha	rge Time: 180m	nins. A	Average Speed [During Discharge	: <u>8,5</u>	_kts. Total Ti	me Run <u> 5.</u>	<u>ටුරි hr.</u>		
		,		ence of Plume?	No		:2				
	Time and po	sition of any floating r	nateria	11: None		Discharge	Rate: 123	Gallons/n	nin/kt.	\wedge	
	Unusual Occ	currences? None		•					111	()	
		made: A.S.P.A.		U.S.C.G.M.S.	.D	_ ,	Master: F∕V	Blue Moon	M. (p	00	

	Date:	09/27/11 Tues.		F/	V Blue Mo	on C	cear	Dumpin	g Log	Voyage:	#: 5480	
	Time				Permit # OD 93			•		-		
3/25	1800	Begin 1 st Loading SK						Volume Load	ded: SK	193,75	50	Gallons
7/25	00 43	Finish 1st Loading SK			Trip # 1 - X				Other			Gallons
1/27		Begin 2 nd Loading SK			Trip#2	-			Total	193.75	0	Gallons
		Finish 2 nd Loading SK				-						
			WP#	GPS Positi		Wind		% Clouds	Barometer		Speed	Course
	0570				170* 41.2' W	Easi		60	29,6	Metric	kts	True*
	0635	Arrive Edge of Zone		14*22. ,56 'S	170*38 :73 W	Eas	12	70	29,63	East-40	8.1	168
	0633	Arrive Zone Center	#2		170*38.3 W	u	*(u		u u	8,1,	159
	0635	Begin Discharge	#3	14*24,06'S	170*37,22\W	и	11	41	и	Fast-1.5 X	7.5	090
	50		# 4	14*23,4718	170*3 7 .79 W	11	41	V.	29.64	e, .,	810	178
	0705	Remarks:	# 5		170*3 7.10 ° W	A	11	80	u	\$1 \$1	7.6	009
	D Ø		#6	14*22.91' S	170*3 7.46′ W	\$1	u	и	29.65		7.5	272
	35		#7	14*24.481S	170*37.76°W	Eas	-15	tv.	"	5	\$.3	180
	50		#8	14*23,52'S	170*37.02'W	"	11	47	ч		7.9	354
	0805		# 9	14*24.31'5	170*37.84'W			4	29.64		8.2	179
	20			14*24. 25 S	170*3 7-14' W			e)	29.63		8.2	007
	<u>ব্র</u>		# 11	14*24,42 S	170*3 2.95'W			70	13		8.5	182
	50		# 12	14*24.47 S	170*37-20W				i)	10		016
	0905		# 13	14*22.83'S	170*3 7.5 4W			rt .	٤١		8.9	269
	900			14*24.58 S	170*37. 78:W			60	ના		8-8	180
	35		# 15	14*2 3,50 S	170*37(13 W			۳)	11		8.6	327
			# 16	14*2 S	170*3 W							
			# 17	14*2 S	170*3 W					15		
			# 18	14*2 S	170*3 W							
			# 19	14*2 S	170*3 W							
			# 20	14*2 S	170*3 W							
				14*2 S	170*3 W							
				14*2 S	170*3 W					20		
				14*2 S	170*3 W			_				
	6940	Finish Discharge	#16	14+23.62's	170*37-35' W	East	-15	60%	29.63	Fost-1.5	8.8	222
	0942		# 17		170*37.46' W		11	"	29.63	in 11	8.9	336
	1040	Secure SK Dock	4	14*16.50' S	170*41.2' W	\dagger			201-03	T		1000
		ection: At Center W	0-1		of Discharge <u>W</u>	lost.		Dioch	orgo Pottorn	Ellipse		
		_	•	⊏na	of Discharge W	LE JI	- ^ -	DISÇII	arge Fallerii_	2//1000		
	Total Discha	arge Time: <u>185 </u>	ins. A	Verage Speed ر	During Discharge	e: <i>0</i>	· <\	kts. Total Ti	me Run 5 · 3	<u>3</u> 上hr.		
	Navigationa	l Plot made: √ Ջ₄	Pres	ence of Plume?	No							
		osition of any floating r				Dia	charac	Rate: 127	Gallons/m	in/kt		
				II. NOTIO		DIS	charge	1\ale. v-\ (GallO[15/II]	4.40	Λ	
		currences? None	·							MAY 1-4		
	Notifications	s made: A.S.P.A.	N	U.S.C.G.M.S.	.D. $ u$			Master: F/V I	Blue Moon	11 (1006		

	Date:	09/29/11 Thurs.			F۸	V Blue Mo	on C)ceai	n Dumpin	ig Log	Vo	yage	#: 5481	
	Time					Permit # OD 93			•					
9/18	0100	Begin 1 st Loading SK							Volume Load	ded: SK	20	00,00	Ð	Gallons
1(10	2130	Finish 1 st Loading SK			1	"rip # 1 - X				Other	6	•		Gallons
	/	Begin 2 nd Loading SK			T	rip # 2				Total	200	0,007)	Gailons
		Finish 2 nd Loading SK										,		
			WP#	GPS Po			Wind		% Clouds	Barometer	Swell		Speed	Course
	0515	Depart Starkist	1	14*16.50'		170* 41.2' W			40	29.63		Metric	kts	True*
	0610	Arrive Edge of Zone	# 1	14*22. <i>5</i> 6°	S 1	170*38. 60 W			L1	29.64	E/SE	-1.0	8.2	161
	0620	Arrive Zone Center	# 2			70*38.3 W			1.	60	13.7)	7.1	162
	0630	Begin Discharge	# 3	14*2 4.11	3 1	170*3 7,19 ' W	East		30	u	/(Х		090
	45		#4	14*23.91	3 1	170*37.74 W	"	fec.	41	29-65)	8.3	183
	0700	Remarks:	# 5	14*2 4. 93' 8		170*37. 31' W	<u> '' </u>	36		29,65	1	<u> </u>	7.7	037
	18		#6	14*2 3.03' 5		170*3 7.28 W	ч	((25		\vdash	 	8.2	305
	<u> 32</u> 45		#7	14*2 4-67'5		170*37.7C' W	u		et 1)	29.66		5		183
			# 8	14*2 3.88 '5		170*37.06' W		-10-		44	1	+	8.6	002
	0800		# 9	14*2 4.11		170*377W	East	-12	4	14	\longmapsto		8,5	178
	15		# 10	14*24.64' 5		170*37.19W	W	<i>M</i>	20		L-/-		8.5	006
	80		# 11	14*23.33		170*37-72 W		^		11			8-8	177
	42			14*2 4, 9 8		170*37. 38'W	"	м	"	61	 	10	1 0	02/
	0900			14*23.21'		170*37.16'W	u	u	25	и	 		8.6	305
	(5		# 14	14*2 4.83		170*37-69 W	ч	**	Lt.	LI.	-		8-9	180
	30			14*2 3 .41' 8		170*37-03' W					<u> </u>		9-1	342
						170*3 W					<u> </u>			
				14*2		170*3 W						15	<u> </u>	
						170*3 W								
			# 19			170*3 W					<u> </u>			
			# 20			170*3 W								
						170*3 W								
						170*3 W						20)	
				1	S ′	170*3 W								
	6935	Finish Discharge	14(6	14*23.01	S	170*3 7.50 W	Eas	-12	25	29.66	E/56	-1.0	8.7	307
	0938	Exit Discharge Zone	417	14*22.67	S	170*37-78 W	1				(9.1	334
	1035	Secure SK Dock				170*41.2' W								
	Current Dir	rection: At Center W:	est	E	nd c	of Discharge_	lost		Disch	arge Pattern_	Ell	pse		
		narge Time: <u>185</u> m						:5	_kts. Total Ti					
		al Plot made: Yex												
	Time and r	position of any floating i	- materia	al None	_		Die	charge	Rate: 127	Gallons/m	in/kt.			
		ccurrences? Name		7.0//				eriai go	100		24	0	0 -	
		ns made: A.S.P.A		_ U.S.C.G.M	.S.E	D			Master: F/V	Blue Moon	14.	Cu	rof	

N ▲	70 38.55 W	70 35.12 W
14 20.93 \$	O1 September, 2011 - Thurs. Voyage # 5469 Starkist Cargo, Trip #1 *Ocean Monitoring/Sampling Conducted M. Crook, Master F/V Blue Moon Disposal Zone Center: 14*24.0' S x 170* 38.3' V	vVind: Northeast @ 10 - 15 kts.
1424.36 \$		



$N \blacktriangle$	170 40.23 W	170 36.82 W		170 33,41 W
		15	07 September, 2011 - Weds. Voyage # 5471 Starkist Cargo, Trip #1 M. Crook, Master FN Blue Moon	
14 22.73 \$		Disposal Zone Center: 14*24.0' S x 170* 38.3' VV	√Vind: East @ 10 - 12 kts.	
14 26.14 \$				

$N \blacktriangle$	170 40.23 W	170 36.82 W		170 33.41 W
		16	09 September, 2011 - Fri. Voyage # 5472 Starkist Cargo, Trip #1 M. Crook, Master F/V Blue Moon	
14 22.73 S	Disposal Zor 14*24.0' S x	ne Center: 170* 38.3' W	vVind: East @ 10 - 12 kts.	
14 26.14 S				

$N \blacktriangle$	170 40.23 W	170 36,82 W		170 33.41 W
			11 September, 2011 - Sun. Voyage # 5473 Starkist Cargo, Trip #1 M. Crook, Master F/V Blue Moon	
14 22.73 \$		Disposal Zone Center: 14*24.0' S x 170* 38.3' W	√Vind: East @ 12 - 15 kts.	
4 26.14 S				

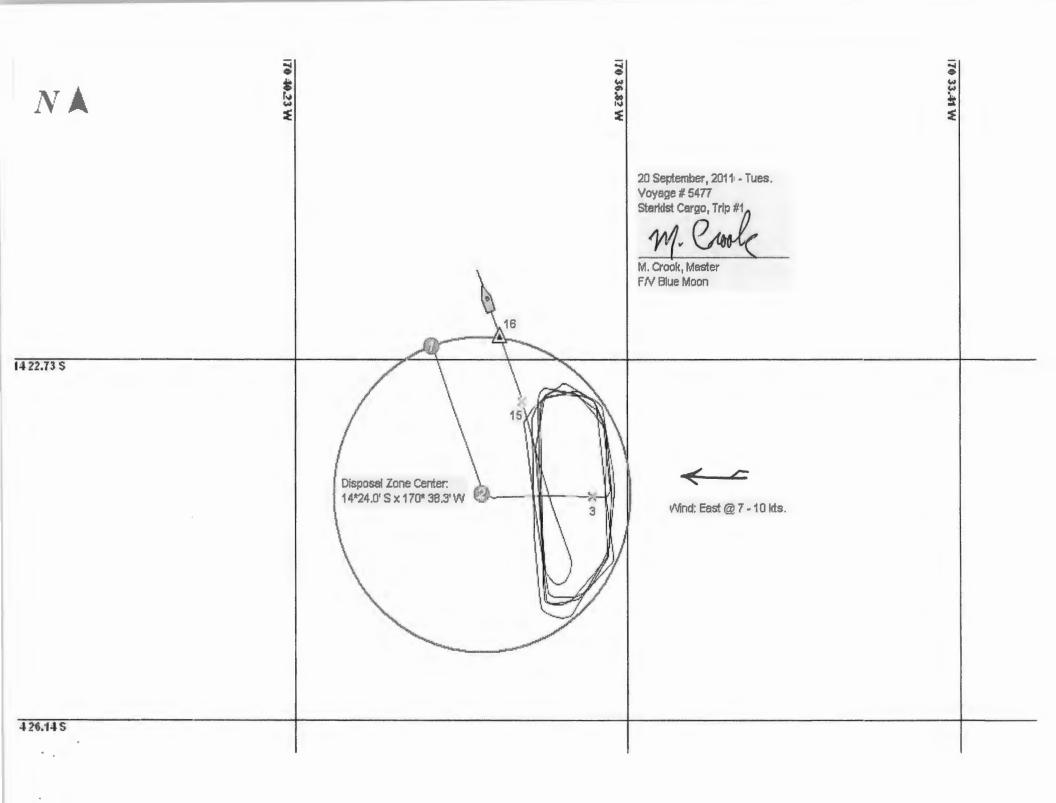
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13 September, 2011 - Tuee. Voyage # 5474 Startist Carps, hight M. Crost, lester Fr/ Stue Moon 1422.73 5 Disposed Zone Carler: 14'24.0' S x 170' 38.3'W Wind: Enst @ 10 - 12 lits.		170 40.23 W	170 36.82 W	11 CO 3C 07 L		170 33.41 W	
Disposal Zone Center: 14*24.0' S x 170* 38.3' W 3 Wind: East @ 10-12 kts.			A State of the sta		Voyage # 5474 Starkist Cargo, Trip.#1 M. Crook, Master		
14 26.14 \$			Disposal Zone Center: 14*24.0' S x 170* 38.3' W				
	14 26.14 S			+		_	

15 September, 2011 - Thurs. Yoyage # 5475 Standst Cargo, Trip #1 M. Crook, Massler FrV Blue Moon Disposal Zone Center: 14*24.0' S x 170*38.3'W VMnd: East @ 10 - 12 kts.	V 🛦	170 36.82 W	170 33.41 W
Disposal Zone Center: 14*24.0" S x 170* 38.3" W		Voyage # 5475 Starkist Cargo, Trip #1 M. Crook, Master	
	.73 S	Disposal Zone Center: 14*24.0' S x 170* 38.3' W	

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N A	170 36.82 W	17 September, 2011 - Sat.
	CHARLES STOCKED A	Voyage # 5476 Starkist Cargo, Trip #1 W. Cuok M. Crook, Master F/V Blue Moon
14 22.73 S	Disposal Zone Center: 14*24.0' S x 170* 38.3' W	vVind: East @ 10 - 12 kts.
14 26.14 S		



70 43.77 200 S	M 00'15 01	70 38.80 W	70 36.60 W	70 34.40 W
	22 September, 2011 - Voyage # 5476 Starkist Cargo, Trip #1	Thur.		
122.40 S	M. Crook, Master F/√ Blue Moon	16	Wind: Northeast @ 7 - 12 kts	3.
			3	
124.60 S		Disposal Zone Center; 14*24.0' S x 170* 38.3' W		

$N \blacktriangle$	170 40.23 W	170 36.82 W	170 33.41 W
	24 September, 2011 - Sat. Voyage # 5479 Starkist Cargo, Trip #1 M. Crook, Master F/V Blue Moon	16	
		Disposal Zone Center: 14*24.0' S x 170* 38.3' W	vind: Calm to NE @ 3 - 7 kts.
4 26.14 S			
4			

420,20,5 A B X	170 38.30 W	170 36,60 W	170 34.40 W	
			27 September, 2011 - Tues. Voyage # 5480 Starkist Cargo, Trip #1 M. Crook, Master Fiv Blue Moon	
4 22.40 \$	Disposal Zone Center 14*24.0' S x 170* 38.	17 16	√Vind: Eest @ 10 - 15 kts.	
424.60 S				

1
29 September, 2011 - Thurs. Voyage # 5481 Starkist Cargo, Trip #1 M. Crook, Master F/V Blue Moon
17
Vind: East @ 10 - 12 kts.
Olivery the state of the state

-

July 12th, 2011

Michael Wolfram Program Manager Pacific Islands Office USEPA Region IX 75 Hawthorne Street San Francisco, CA 94105

RE: OCEAN DUMPING PERMIT OD93-02 SPECIAL

Dear Michael:

Pursuant to the requirements of the above referenced permit, we are herewith submitting the Quarterly ocean dumping report for the period of April 2011 through June 2011 for COS Samoa Packing Company. No waste has been generated or transferred or dumped in this quarter. Enclosed are the following:

- * EPA Forms 1, 2 and 3.
- * Results of Monthly Onshore Storage Tank Analysis. No testing was done. N/A
- * Letter to ASEPA reporting exceedances and irregularities during the 3 month period where applicable. There were no exceedances. N/A
- * Monthly Site Monitoring Reports. N/A
- * Results of Monthly Site Monitoring Analysis.

Please advise if additional information is required.

Sincerely.

Craig Double

Facility Manager

Samoa Tuna Processors Inc.

Enclosures:

Pacific Island Office

Cc(1) Except Vessel Logs

Director

American Samoa Environmental

Protection Agency

American Samoa Government

Pago Pago, American Samoa 96799

Cc(1) Complete Report

Director of Engineering

Chicken of the Sea International

9330 Scranton Road

Suite 500

San Diego, California 92121

Allan Ota

Wetlands Office US EPA Region IX 75 Hawthorne Street

San Francisco, CA 94105

Cc(1) Vessel Logs Only

Commanding Chief

U.S. Coast Guard Liaison Office

P.O. Box 249

Pago Pago, American Samoa 96799

Cc(1) Except Vessel Logs:

Project Leader

Office of Environmental Services U.S. Fish and Wildlife Service 300 Ala Moana Boulevard

P.O. Box 50167

Honolulu, Hawaii 96850

John Naughton

Pacific Island Regional Office

1601 Kapiolani BLvd.

Suite 1110

Honolulu, Hawaii 96814-4700

Executive Director

Western Pacific Regional Fishery

Management Council

1164 Bishop Street, Suite 1405

Honolulu, Hawaii 96813

Monthly Volumes of COS Samoa Packing Fish Processing Wastes Generated Per Day and Volumes of Fish Processing Wastes Disposed at the Ocean Site

Month:

	DAF Sludge	Precooker Water	Press Water	Total	Volume
	Generated	Generated	Generated	Generated	Ocean Disposed
OD 93-02	(gallons/day)	(gallons/day)	(gallons/day)	(gallons/day)	(galions/day)
Permit					
Limits	60,000	100,000	40,000	200,000	200,000
April 2011	No waste for April		V	× .	
Totals	0	()			/

Note: An asterisk(*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred.

The number of violations are shown in the Monthly "Totals" row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum Sulfate:

0 pounds/month

Monthly Volumes of COS Samoa Packing Fish Processing Wastes Generated Per Day and Volumes of Fish Processing Wastes Disposed at the Ocean Site

Month: Manager 1

	DAF Sludge	Precooker Water	Press Water	Total	Volume
	Generated	Generated	Generated	Generated	Ocean Disposed
OD 93-02	(gallons/day)	(gallons/day)	(gallons/day)	(gallons/day)	(gallons/day)
Permit					
Limits	60,000	100,000	40,000	200,000	200,000
May	No waste for Ma	У		E. Comp	
Totals	0	, si	(1		11

Note: An asterisk(*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred.

The number of violations are shown in the Monthly "Totals" row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum Sulfate:

0 pounds/month

Monthly Volumes of COS Samoa Packing Fish Processing Wastes Generated Per Day and Volumes of Fish Processing Wastes Disposed at the Ocean Site

Month:

	DAF Sludge	Precooker Water	Press Water	Total	Volume
	Generated	Generated	Generated	Generated	Ocean Disposed
OD 93-02	(gallons/day)	(gallons/day)	(gallons/day)	(gallons/day)	(gallons/day)
Permit					
Limits	600,00	100,000	40,000	200,000	200,000
June 2011	No waste for	lune			
Totals	Ç?	(')		£7	• • • • • • • • • • • • • • • • • • • •

Note: An asterisk(*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred.

The number of violations are shown in the Monthly "Totals" row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum Sulfate:

0 pounds/month

Data Form for 3-Month Report on Waste Stream Analyses for COS Samoa Packing MPRSA 102 Permit #OD 93-02

Reporting Period: From

2011 to

June

2011

COS Samoa Packing - Onshore Storage Monitoring Report

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)		Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
April-11 May-11 June-11									
OD 93-02 Permit Limits	54,590	58,760	87,780	48,630	2,820	11,070	5,200	5.8 to 7.5	.97 to 1.03

NOTE: An asterisk(*) next to the waste concentration signifies that an exceedance of the permit limit has occurred.

Cumulative Yearly Data on Fish Processing Wastes Generated at COS Samoa Packing Company and Disposed at the Ocean Site MPRSA 102 Special Permit #OD 93-02

Reporting Period: From

01 M.M.

2011

2011

	DAF Sludge	Cooker Water	Press Water	Total		Volume
Month & Year	Generated (gallons/month)	Generated (gallons/month)	Generated (gallons/month)	Generated (gallons/month)	Coagulate polymer (pounds/month)	Ocean Disposed (gallons/month)
Jan. 2011	0	0	0	3	4	- 1
Feb. 2011	0	0	Ω	· j		Ü
Mar. 2011	0	0	0	<u> </u>		i)
Apr. 2011	0	0	ij			
May. 2011	0	0	()	: 1		1
Jun. 2011	0	0	U O		0	. 5
Jul. 2011						
Aug. 2011						
Sep. 2011						
Oct. 2011						
Nov. 2011						
Dec. 2011						
Cumulative						
Yearly Totals	0	0	0	U)	4

NOTE: A seperate table shall be prepared for each calendar year.

Ocean Disposal Site Monitoring Report

(OD Permit 93-01 & 93-02)

28 April, 2011

Monitoring Vessel:

F/V Blue Moon

Discharge Vessel:

F/V Blue Moon

Chief Investigator:

Mike Crook

Starkist Samoa Liaison:

Joe Carney

STP/Tri Marine Liaison:

Craig Double

Determination of Sampling Positions:

All positions obtained by GPS Satellite Navigation



Mike Crook P.O. Box 4933 Pago Pago, AS 96799 30 April, 2011

Introduction

On April 28, 2011 the tank-ship *Blue Moon* departed Starkist Samoa dock bound for the designated ocean dump-site area approximately seven miles south of Pago Pago Harbor, American Samoa, on a routine wastewater disposal operation and for the purpose of monitoring this disposal of tuna cannery generated hi-strength liquid wastes into the waters of the Pacific Ocean. This monitoring and reporting were conducted in compliance with general permit conditions and Appendix A of Ocean Dumping Permits OD 93-01 & OD 93-02.

Chronology of Events

- <u>0505:</u> The *Blue Moon* departed Pago Pago Harbor bound for the dump-site location with Master/Principal Investigator, Chief and Mate on board.
- **<u>0558:</u>** The *Blue Moon* entered the dumpzone circle @ 14*22.6' S x 170*38.7' W.
- <u>0608:</u> The *Blue Moon* arrived at the dump-zone center, where observed east winds and slight east to southeasterly seas initially indicated disposal operations be conducted in the eastern dump-zone quadrant.
- Ontrol Station Monitoring. The Blue Moon arrived 1.1 nautical miles (NM) up-current or east (E) of the dump-zone center, where discrete seawater samples were taken from depths of 1, 3, and 10 meters. Water temperatures, color, pH and observed sea/sky conditions with stations' position were recorded (Table 1). Seas at this time were slight with East & SE swells to 1.5 meters and east winds at 10 knots (kts.) with the barometer reading 29.56. Current set and drift of the ship, by GPS, were to the west at 1.2 knots. No floating materials or sea life were observed here.
- The *Blue Moon* began disposal operations in the eastern dump zone quadrant and continued discharging cargo (high strength waste water) with a north (N) to south (S) reciprocal, elongated elliptical pattern, approximately 2.25 miles long (see Plot 1) until 0943 hrs.
- Station One Monitoring (See Plot #1). Discrete water samples were drawn from depths of 1, 3, and 10 meters. Water temperatures, pH, stations' position and water color observations were all recorded in Table 1. The east wind had increased to 15 kts. with cloudy skies. The waste plume was not visibly present here and was only apparent further down-current to the west some distance, (at least 0.5 miles) away.. The current/wind drift of the ship was GPS determined to be westerly @ 1.4 knots. A small shark was seen to follow the water sampler up from the 10 meter drop. No floating or suspended materials were noted here.

- <u>Station Two Monitoring.</u> Station two was sampled with the same procedures as station one with measurements and observations being recorded in Table 1. This position showed similar coloration qualities as those at Station #1, with only clear natural blue appearing seawater and no visible indication of the waste plume. The average drift rate of the ship with current and wind was GPS determined here to be westerly (W) at a rate of 1.6 knots between stations 2 & 3 (See Plot #1). No sea-life or floating materials were noted at this position.
- Station Three Monitoring. Seawater samples were collected and measurements taken as with Stations 1 & 2. This position showed a broad area of broken streaks and patches of moderate surface sheen over clear sub-surface waters. Sea & wind conditions remained the same as with the previous two sample stations and the drift rate of the ship between Stations #3 & 4 was 1.5 knots, again, to the west.
- 1015: Station Four monitoring. This area showed more patches of moderate surface sheen along with a sparse concentration of fine, light grey colored suspended particulate material. The westerly current/drift rate of the ship was again noted here to be at 1.5 knots. No sea-life was observed.
- Station Five monitoring. Sampling for this final station was conducted at 1025: the visual leading edge of the waste plume and approximately 0.41 NM west of the zone center (See Plot #1). The leading edge of the waste plume was distinctive at this location as an unbroken line of heavy glassy surface sheen with clear, natural appearing blue waters further down-current to the west. Also present in and under this sheen, was a fairly dense concentration of floating and suspended particulate material extending down to the limit of water visibility. All these materials were light brown, gray or ash colored. The final drift rate of the ship was noted to be 1.4 knots. Other than a few random seabirds flying by and the shark noted at Station #1, no significant sea life was observed at this position or any of the previous stations. The final barometer reading was 29.59 when monitoring activities were concluded at 1035 hrs. The Blue Moon exited the disposal zone at 1045 hours and arrived back in Pago Pago Harbor to deliver the collected samples to the Starkist Samoa Co. laboratory at 1135 hours.

Prepared by Mike Crook, Principal Investigator

OCEAN DUMPING RESEARCH PERMIT: OD-93-01 & 02

Table 1

<u>Date:</u> April 28,	Sea Conditions: Slight w/ East & Southeast swells to 1.5 meters. Wind: East @ 10 - 15 knots Visibility: Good 6 - 10+ miles							
2011	Barometer: 29.53	- 29.59	Curre	Current Set & Drift Rate: West @ average 1.5 knots Sky: Cloudy, 70 - 1000%				
Time	Station	Depth (meters)	Temp.	pН	Odor	Color		
		1	28.3	7.3				
0620	Control	3	28.3	7.3	None	Clear and natural deep pelagic blue w/ no floating or suspended		
		10	28.3	7.3		materials.		
		1	28.9	7.3				
0945	Station 1	3	28.9	7.3	None	Same as Control Station.		
		10	28.3	7.3		•		
		1	28.9	7.3				
0955	Station 2	3	28.9	7.3	None	Again, same as Control and Station #1.		
		10	28.3	7.3				
		1	28.9	7.3		Broad area of broken streaks and patches of moderate glassy surface		
1005	Station 3	3	28.9	7.3	Slightly	sheen over deep, clear blue. No floating or suspended particulate or		
		10	28.9	7.3	Pungent	other material.		
		1	28.9	7.3		More broken patches of moderate surface sheen along with		
1015	Station 4	3	28.9	7.3	Slightly	suspended, fine & light colored suspended particulates, not		
		10	28.9	7.3	Pungent	particularly dense in concentration.		
		1	28.9	7.3		Leading edge of the waste plume: Distinct area of an unbroken north		
1025	Station 5	3	28.9	7.3	Pungent	to south line of heavy surface sheen along with a fairly dense		
		10	28.9	7.3		concentration of floating and suspended, brownish particulate material.		

SAMPLE STATIONS POSITIONS

	LATIT	UDE	LONG	ITUDE
Control - C	14° 24.08'	South	170° 37.26'	West
Station 1	14° 24.03'	South	170° 36.87'	West
Station 2	14° 24.06'	South	170° 37.14'	West
Station 3	14° 24.15'	South	170° 37.50'	West
Station 4	14° 24.09'	South	170° 37.82'	West
Station 5	14° 23.99'	South	170° 38.58'	West

N 🛦	PLOT #1 Ocean Monitoring Sampling Stations Control (C) and Sampling Stations #1 - #5 28 April, 2011 M. Crook, Investigator	•
14 21.90 S	IVI. CI OUK, III VESII GOLOI	
	#2 Current Set: West	
	Disposal .fone Center: 14*24 0' S x 170* 38.3' W	

Ocean Disposal Site Monitoring Report

(OD Permit 93-01 & 93-02)

24 May, 2011

Monitoring Vessel: F/V Blue Moon

Discharge Vessel: F/V Blue Moon

Chief Investigator: Mike Crook

Starkist Samoa Liaison: Joe Carney

STP/Tri Marine Liaison: Craig Double

Determination of Sampling Positions:

All positions obtained by GPS
Satellite Navigation

RECEIVED
MAY 2 1 2011

BY

Mike Crook P.O. Box 4933 Pago Pago, AS 96799 26 May. 2011

Introduction

On May 24, 2011 the tank-ship *Blue Moon* departed Starkist Samoa dock bound for the designated ocean dump-site area approximately seven miles south of Pago Pago Harbor, American Samoa, on a routine wastewater disposal operation and for the purpose of monitoring this disposal of tuna cannery generated hi-strength liquid wastes into the waters of the Pacific Ocean. This monitoring and reporting were conducted in compliance with general permit conditions and Appendix A of Ocean Dumping Permits OD 93-01 & OD 93-02.

Chronology of Events

- <u>0505:</u> The Blue Moon departed Pago Pago Harbor bound for the dump-site location with Master/Principal Investigator, Chief and Mate on board.
- \$555. The Bias Moon entered the Companie Strete @ 14*22.3 S x 170*38.7 %.
- <u>0605:</u> The Bive Moon arrived at the dump-zone center, where observed ESE winds and slight south to southeasterly seas initially indicated disposal operations be conducted in the eastern dump-zone quadrant.
- <u>Control Station Monitoring.</u> The Blue Moon arrived 1.1 nautical miles (NM) up-current or east (E) of the dump-zone center, where discrete seawater samples were taken from depths of 1, 3, and 10 meters. Water temperatures, color, pH and observed sea/sky conditions with stations' position were recorded (Table 1). Seas at this time were slight with south & SE swells to 1.5 meters and east winds at 10 knots (kts.) with the barometer reading 29.58. Current set and drift of the ship, by GPS, were to the west at 0.7 knots. No floating materials or sea life were observed here.
- The *Blue Moon* began disposal operations in the eastern dump zone quadrant and continued discharging cargo (high strength waste water) with a north (N) to south (S) reciprocal, elongated elliptical pattern, approximately 2.25 miles long (see Plot 1) until 0853 hrs.
- Station One Monitoring (See Plot #1). Discrete water samples were drawn from depths of 1, 3, and 10 meters. Water temperatures, pH, stations' position and water color observations were all recorded in Table 1. The east wind had increased to 12 kts. with partly cloudy skies. The waste plume, visibly present here as a heavy surface sheen, also had abundant floating and suspended material as described in Table 1. The current/wind drift of the ship was GPS determined to be westerly @ 0.5 knots. No sealife was observed.

- <u>Station Two Monitoring.</u> Station two was sampled with the same procedures as station one with measurements and observations being recorded in Table 1. This position showed a lighter sheen than Station #1 and again, had floating and suspended particulates (See Table #1). The average drift rate of the ship with current and wind was GPS determined here to be westerly (W) at a rate of 0.6 knots between Stations #2 & 3 (See Plot #1). No sea-life was noted at this position.
- Station Three Monitoring. Seawater samples were collected and measurements taken as with Stations 1 & 2. This position, 0.25 NM down-current (West) of Station #2, showed no sign of the plume's characteristic surface sheen or additional floating / suspended particulate material. Sea & wind conditions remained the same as with the previous two sample stations and the drift rate of the ship between Stations #3 & 4 was 0.5 knots, again, to the west.
- 935: Station Four monitoring. This area showed no sign of the typical surface sheen but did have a sparse concentration of fine, light gray colored floating and suspended particulate material. The westerly current/drift rate of the ship was again noted here to be at 0.5 knots. No sea-life was observed.
- Station Five monitoring. Sampling for this final station was conducted at the visual leading edge of the waste plume and approximately 0.28 NM southeast of the zone center (See Plot #1). The leading edge of the waste plume was not distinctive at this location but showed only a few broken streaks of slightly glassy surface sheen with clear, natural appearing blue waters further down-current to the west. No additional floating and suspended particulate material was visible. The final drift rate of the ship was noted to be westerly at 0.5 knots. Other than a few random seabirds flying, no significant sea life was observed at this position or any of the previous stations. The final barometer reading was 29.60 when monitoring activities were concluded at 0950 hrs. The Blue Moon exited the disposal zone at 1000 hours and arrived back in Pago Pago Harbor to deliver the collected samples to the Starkist Samoa Co. laboratory at 1050 hours.

Prepared by _ Mike Crook.

Principal Investigator

OCEAN DUMPING RESEARCH PERMIT: OD-93-01 & 02

Table 1

<u>Date:</u> May 24, 2011	Sea Conditions: S Barometer: 29.58					Wind: ESE @ 7 - 12 knots Visibility: Unlimited Vest @ average 0. 5 knots Sky: Cloudy, 30 - 40%		
Time	Station	Depth (meters)	Temp.	рН	Odor	Color		
		1	27.2	8.0	A STATE OF THE STA	Clear and natural deep pelagic blue w/ no floating or suspended		
0615	Control	3	27.2	7.9	None	materials.		
		10	27.2	7.7				
0905	Station 1	1	28.3	8.0	Slightly Pungent	Patches of moderate surface sheen along with abundant, large, brown		
		3	28.3	7.7		colored floating & suspended particulates, fairly dense in		
		10	27.8	7.9		concentration extending to the limit of visibility.		
	Station 2	1	27.8	7.7	Slightly Pungent	Very light surface sheen but floating and suspended brownish		
0915		3	27.8	7.9		particulates still present. Smaller in size and less concentrated than		
		10	27.8	8.1		Station #1.		
	Station 3	1	28.3	7.9	Slightly	Clear and natural deep pelagic blue w/ no floating or suspended		
0925		3	28.3	7.9		materials. No sign of the wastewater plume at this position.		
		10	28.3	8.0	Pungent			
		1	28.3	8.0		No visible surface sheen however still notable, fine & light gray or as		
0935	Station 4	3	28.3	7.9	Slightly	colored suspended particulates, not particularly dense in		
		10	28.3	7.7	Pungent	concentration. Nothing floating on surface		
		1	28.3	7.8	None	Leading edge of the waste plume: Only the occasional light streak of		
0945	Station 5	3	28.3	8.0		surface sheen over deep, clear, natural appearing blue water. No		
		10	28.3	8.0		more suspended or floating particulate material noted.		

SAMPLE STATIONS POSITIONS

	LATIT	TUDE	LONG	ITUDE
Control - C	14° 24.05'	South	170° 37.22°	West
Station 1	14° 24.14'	South	170° 36.85°	West
Station 2	14° 24.20'	South	170° 37.09'	West
Station 3	14° 24.22'	South	170° 37.37'	West
Station 4	14° 24.21'	South	170° 37.68'	West
Station 5	14° 24.21'	South	170° 38.10°	West

NA	170 40.23 W		170 36.82 W		170 33.44 W
				Ocean Maritoring Sampling Stations Control (C) and Sampling Stations #1 - #5. White 2017 M. Crook, the estigator	
4 22.73 S		Disposal Zone Center: 14*24 0' S x 170* 38.3' W		- urrent Set; Was	
4 26.14 S					

Ocean Disposal Site Monitoring Report

(OD Permit 93-01 & 93-02)

04 June, 2011

Monitoring Vessel: F/V Blue Moon

Discharge Vessel: F/V Blue Moon

Chief Investigator: Mike Crook

Starkist Samoa Liaison: Joe Carney

STP/Tri Marine Liaison: Craig Double

Determination of Sampling Positions: All positions obtained by GPS

Satellite Navigation



Mike Crook P.O. Box 4933 Pago Pago, AS 96799 07 June, 2011

Introduction

On June 4, 2011 the tank-ship *Blue Moon* departed Starkist Samoa dock bound for the designated ocean dump-site area approximately seven miles south of Pago Pago Harbor, American Samoa, on a routine wastewater disposal operation and for the purpose of monitoring this disposal of tuna cannery generated hi-strength liquid wastes into the waters of the Pacific Ocean. This monitoring and reporting were conducted in compliance with general permit conditions and Appendix A of Ocean Dumping Permits OD 93-01 & OD 93-02.

Chronology of Events

- <u>0505:</u> The *Blue Moon* departed Pago Pago Harbor bound for the dump-site location with Master/Principal Investigator, Chief and Mate on board.
- 0556: The Blue Moon entered the dumpzone circle @ 14*22.5' S x 170*38.7' W.
- <u>0607</u>: The *Blue Moon* arrived at the dump-zone center, where observed east winds and southeasterly seas initially indicated disposal operations be conducted in the eastern dump-zone quadrant.
- <u>Control Station Monitoring.</u> The *Blue Moon* arrived 1.1 nautical miles (NM) up-current or east (E) of the dump-zone center, where discrete seawater samples were taken from depths of 1, 3, and 10 meters. Water temperatures, color, pH and observed sea/sky conditions with stations' position were recorded (Table 1). Seas at this time were moderate with SE swells to 2.5 meters and east winds at 12 knots (kts.) with the barometer reading 29.62. Current set and drift, of the ship, were to the west at 1.0 knots. No floating materials or sea life were observed here.
- <u>0630:</u> The *Blue Moon* began disposal operations in the eastern dump zone quadrant and continued discharging cargo (high strength waste water) with a north (N) to south (S) reciprocal, elongated elliptical pattern, approximately 2.2 miles long (see Plot 1) until 0930 hrs.
- Op40: Station One Monitoring. Discrete water samples were drawn from depths of 1, 3, and 10 meters. Water temperatures, pH, stations' position and water color observations were all recorded in Table 1. The east wind had increased to 15 kts. with cloudy skies. The waste plume was not visibly present here and was only apparent further down-current to the west some distance, (approximately 0.25 miles) away.. The current/wind drift of the ship was GPS determined to be westerly @ 1.3 knots. No sea life or floating materials were observed.

<u>Station Two Monitoring.</u> Station two was sampled with the same procedures as station one with measurements and observations being recorded in Table 1. This position showed the typical coloration qualities of a partially dispersed wastewater plume; scattered patches of heavy glassy surface sheen, remnants of the north to south reaching track lines left by the discharge vessel. The average drift rate of the ship with current and wind was GPS determined here to be westerly (W) at a rate of, again, 1.3 knots between stations 2 & 3 (See Plot #1). No sea-life or floating materials were noted at this position.

Station Three Monitoring. Seawater samples were collected and measurements taken as with Stations 1 & 2. This position, 0.25 NM down-current from Station #2, showed no visible sign of the waste plume, likely being the center of the discharge ellipse that was moving to the west. Sea & wind conditions remained the same as with the previous sample stations and the drift rate of the ship between Stations #3 & 4 was 1.1 knots, again, to the west.

Station Four monitoring. This area showed more of the surface sheen over clear blue subsurface water, pretty much the same color qualities as with Station #2 with this sheen being moderate rather than the heavy sheen noted at Station #2. The westerly current/drift rate of ship was noted here to be at 1.0 knots. No floating scum or suspended particulate materials were observed at any of these sample stations.

Station Five monitoring. Sampling for this final station was conducted at the visual leading edge of the waste plume and was located right at the zone center (see Plot #1). The plume remnants were clearly visible at this location as distinct streaks and broken up patches of moderate to heavy glassy surface sheen with clear, natural appearing blue waters further down-current to the west and no floating or suspended scum or particulates. No notable sea life was observed at this position or any of the previous stations other than a few random seabirds flying by. The final barometer reading was 29.64 when monitoring activities were concluded at 1030 hrs. The *Blue Moon* exited the disposal zone at 1040 hours and arrived back in Pago Pago Harbor to deliver the collected samples to the Starkist Samoa Co. laboratory at 11:30.

Mike Crook, Principal Investigator

OCEAN DUMPING RESEARCH PERMIT: OD-93-01 & 02

Table 1

<u>Date:</u> June 04,	Sea Conditions: M	oderate w/ So	utheast sw	ells to 2.5 n	neters. Wind	l: ESE @ 10 - 15 knots <u>Visibility:</u> Fair to Good	
2011	Barometer: 29.62	Curre	Current Set & Drift Rate: West @ average 1.2 knots Sky: Cloudy w/ some passing rain				
Time	Station	Depth (meters)	Temp.	pН	Odor	Color	
		1	27.2	8.2	Tony	12 Sept. Company of the Company of t	
0620	Control	3	27.2	8.2	None	Clear and natural deep pelagic blue w/ no floating or suspended	
		10	26.7	8.2		materials.	
		1	27.2	8.2		Same color qualities as Control Station, clear and natural blue with	
0940	Station 1	3	27.2	8.2	None	no floating or suspended particulate material.	
		10	27.2	8.2			
		1	27.2	8.2	Slightly	Streaks and patches of heavy, glassy surface from broken up, north to	
0950	Station 2	3	27.2	8.2		south running, vessel discharge track lines. No sign of floating or	
		10	27.2	8.2	Pungent	particulate materials.	
		1	27.2	8.1			
1000	Station 3	3	27.2	8.1	none	Same color qualities as Control & Station #1	
		10	27.2	8.2			
		1	27.2	8.1		Broad area of broken streaks and patches of moderate glassy surface	
1010	Station 4	3	27.2	8.1	Slightly	sheen over deep, clear blue. No floating or suspended particulate or	
		10	27.2	8.2	Pungent	other material.	
		1	27.2	8.1		Leading edge of the waste plume: Broken up, north to south running	
1020	Station 5	3	27.2	8.2	Slightly	line of heavy surface sheen but no floating or suspended particulate	
		10	26.7	8.2	Pungent	materials noted.	

SAMPLE STATIONS POSITIONS

	LATIT	UDE	LONG	ITUDE
Control - C	14° 24.08'	South	170° 37.19'	West
Station 1	14° 23.95'	South	170° 36.89'	West
Station 2	14° 24.01'	South	170° 37.20'	West
Station 3	14° 24.02'	South	170° 37.65'	West
Station 4	14° 24.01'	South	170° 37.96'	West
Station 5	14° 23.98'	South	170° 38.27'	West

N \blacktriangle	170 40.23 W	170 36,82 W		170 33.41 W
			PLOT #1 Ocean Monitoring Sampling Stations Control (C) and Sampling Stations #1 #5 04 June, 2011	
			M. Crook, Investigator	
14 22.73 S				
	Disposal Zone (14*24.0' S x 17)	Center: #5 #4 #3 #2 0* 38.3' W		
			Current e., West	
1426.145				